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MOTOR GASOLINES, WINTER 1968-69

MOTOR GASOLINES, WINTER 1968-69

by

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INTRODUCTION

This report on the properties of motor fuels sold through service stations in the United States was made in accordance with a cooperative agreement between the American Petroleum Institute and the Bureau of Mines of the United States Department of the Interior. By agreement with the American Petroleum Institute, identification of the items is confidential.

It presents analytical data for 4,535 samples, representing the products of 72 companies. The samples were collected by companies during December 1968, January, and February 1969. As in previous surveys, the gasolines covered by this survey include those from both large and small suppliers. The data were obtained by laboratories of various refiners, motor manufacturers, and chemical companies and submitted to the Bureau of Mines for compilation. A list of the motor-gasoline survey reports published during the past 10 years is on page 4.

SUMMARY

A summary of the characteristics of motor gasoline for winter 1968-69 is presented in table 1, and for comparison, a similar summary for winter 1967-68 is shown in table 2. Trends of some of the more important characteristics over a period of years are shown in figures 1 and 2. The following tabulation indicates trends of national average octane numbers during recent years:

	Regular-price		Premium-price	
	Octane number		Octane number	
	Research	Motor	Research	Motor
Summer 1967	93.8	85.8	99.9	91.7
Winter 1967-68	93.8	85.9	99.9	91.9
Summer 1968	93.8	86.0	99.9	91.9
Winter 1968-69	93.8	86.3	99.8	92.2

Regional average octane numbers of regular- and premium-price fuels may be found in tables 3 and 4.

Included in table 5 are data for three other grades of motor gasoline as follows:

	Third grade	Intermediate grade	Super-premium
Brands	2	3	2
Items	13	14	10
Samples	85	74	13

Analyses for third grade motor gasoline were shown in Bureau of Mines survey reports during the late thirties and early forties. Tabulating data for this grade was resumed in the survey of summer 1963, and data for the intermediate grade fuels were included in the same survey. Super-premium motor gasolines have been represented in the survey reports since summer 1956, but the samples and brands have decreased greatly since the survey of winter 1960-61.

TERMS, TABLES, AND FIGURES

Terms used in the surveys have the following meanings:

District: The designation of a marketing area for collecting samples and data. The present arrangement of 17 districts, developed by the CFR Committee, 1/ was selected with reference to the specifications on motor gasolines, refinery locations, population centers, and arteries of commerce such as navigable rivers. The States or parts of States in each district are indicated in the headings of table 3 and are shown in figure 5.

Brand: The gasoline sold in a given price group under a given trade name.

Item: The index number assigned to a given brand in a given district. The data for each item represent the average of those submitted for that brand in that district. The number of samples represented follows the item number.

Sample: The individual supply of gasoline obtained at the service station and analyzed in the laboratory.

Table 3 presents by districts data for gravity, sulfur, gum, lead, research- and motor-method octane numbers, Reid vapor pressure, and distillation characteristics of the motor fuels collected. The tests were made according to procedures standardized by the American Society for Testing and Materials. 2/

Corrosion test results are not included in the district tables as all the reported figures are "1," according to the corrosion scale given in table 1 of ASTM D130-56. 2/

1/ Coordinating Fuel and Equipment Research Committee (formerly the Coordinating Fuel Research Committee) of the Coordinating Research Council, Inc. From 1935 to 1948 the motor-gasoline surveys were conducted under a cooperative agreement between the Coordinating Research Council and the Bureau of Mines.

2/ American Society for Testing and Materials, 1969 Book of ASTM Standards, Part 17, Petroleum Products -- Fuels; Solvents; Burner Fuel Oils; Lubricating Oils, Cutting Oils; Lubricating Greases; Hydraulic Fluids, Philadelphia, 1969, 1,180 pp.

Gum test data are reported to the nearest whole figure. The distillation temperatures, corrected to barometric pressure at sea level, are on the percent evaporated basis.

Average values appear at the foot of the data columns in table 3 for the respective grades of fuel shown in each district. These values are arithmetical averages of the data shown for the items and were computed without reference to the total number of samples represented.

The district averages from table 3 are assembled in table 4. The third column in table 4 headed "Items (brands)" indicates the number of brands in the districts whose averages are here summarized. The figures at the foot of each column of data are national averages based on 17 districts.

Table 5 shows data, from their respective districts, for third grade, intermediate grade, and super-premium motor gasolines.

Figures 1 and 2 illustrate trends in the national averages of certain properties of regular- and premium-price gasolines, respectively, since summer 1946. Averages for the winter surveys are plotted on the lines representing the years and for the summer surveys between the lines. Octane-number points are connected for successive surveys, but those for Reid Vapor pressure and distillation temperatures are connected by season and appear as two lines on each chart. Charts showing plots of these properties from 1935 (except winter 1941-42 and summer 1942) may be seen in the survey report on motor gasolines for winter 1964-65 and in reports preceding that issue. 3/

Figures 3 and 4 illustrate distribution (frequency) of octane values by numbers of samples for all grades of fuel represented. Each bar represents one-half octane number.

The districts, locations, and numbers of samples of gasoline represented are listed in table 8 and shown on the map, figure 5, facing the table. The locations are named for the principal cities in the respective vicinities, and include suburbs and neighboring communities. The area of the circle at each location is proportional to the number of samples obtained. The segments of the large circle in the lower left corner, drawn to the same scale, represent the numbers of samples from the different districts. The summary at the end of table 8 lists by district the number of locations, samples, and the percentages of the latter based on the total reported.

3/ Blade, O. C., Motor Gasolines, Winter 1964-65. Bureau of Mines Petroleum Products Survey No. 40, 38 pp. (in cooperation with the American Petroleum Institute).

In tables 6 and 7 are tabulated by whole octane ratings the cumulative percentages of samples of all grades for each district by the research- and motor-methods, respectively.

SIGNIFICANCE OF DATA

This report does not discuss the significance of the data presented. Reference may be made to the ASTM specification 4/ for motor gasoline and its appendix, "Significance of ASTM Specifications for Motor Gasoline," at a technical library.

LIST OF MOTOR-GASOLINE SURVEY REPORTS, 1959-69

Author	Season and Year	Report No.	Published	Pages
In cooperation with the American Petroleum Institute				
Blade, O. C.	Winter 1958-59	PPS No. 10	June 1959	33
Do.	Summer 1959	PPS No. 12	Jan. 1960	31
Do.	Winter 1959-60	PPS No. 15	June 1960	33
Do.	Summer 1960	PPS No. 17	Dec. 1960	34
Do.	Winter 1960-61	PPS No. 20	June 1961	34
Do.	Summer 1961	PPS No. 22	Jan. 1962	32
Do.	Winter 1961-62	PPS No. 25	June 1962	33
Do.	Summer 1962	PPS No. 27	Jan. 1963	32
Do.	Winter 1962-63	PPS No. 30	June 1963	32
Do.	Summer 1963	PPS No. 33	Jan. 1964	35
Do.	Winter 1963-64	PPS No. 35	June 1964	40
Do.	Summer 1964	PPS No. 37	Dec. 1964	40
Do.	Winter 1964-65	PPS No. 40	July 1965	38
Do.	Summer 1965	PPS No. 43	Jan. 1966	39
Do.	Winter 1965-66	PPS No. 45	June 1966	38
Do.	Summer 1966	PPS No. 48	Dec. 1966	38
Do.	Winter 1966-67	PPS No. 50	June 1967	38
Do.	Summer 1967	PPS No. 53	Dec. 1967	38
Do.	Winter 1967-68	PPS No. 55	June 1968	39
Do.	Summer 1968	PPS No. 58	Jan. 1969	38
Do.	Winter 1968-69	This report		

4/ American Society for Testing and Materials, Tentative Specifications for Gasoline (D439-68T): 1969 Book of ASTM Standards, Part 17 (see footnote 2), pp. 167-176.

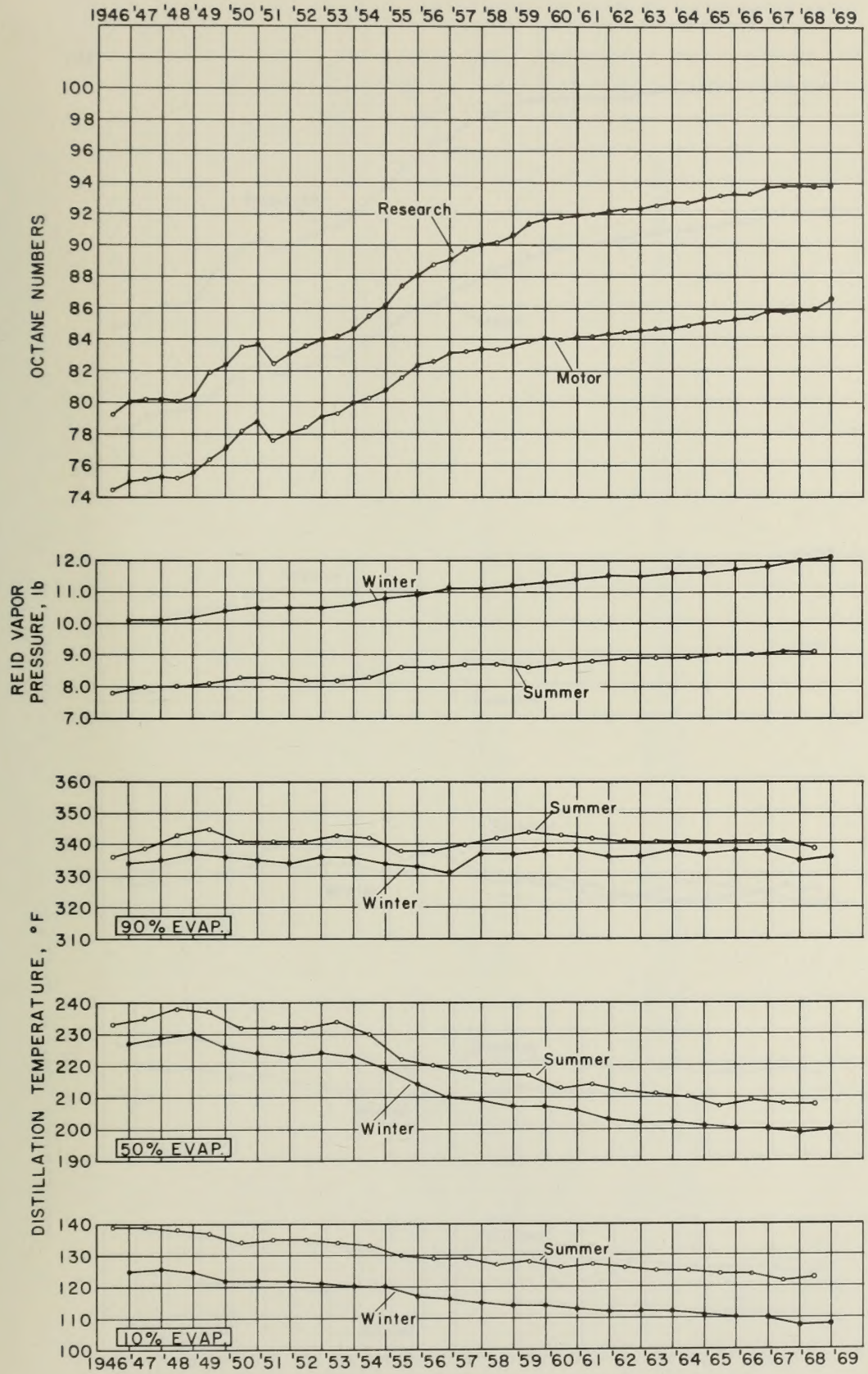
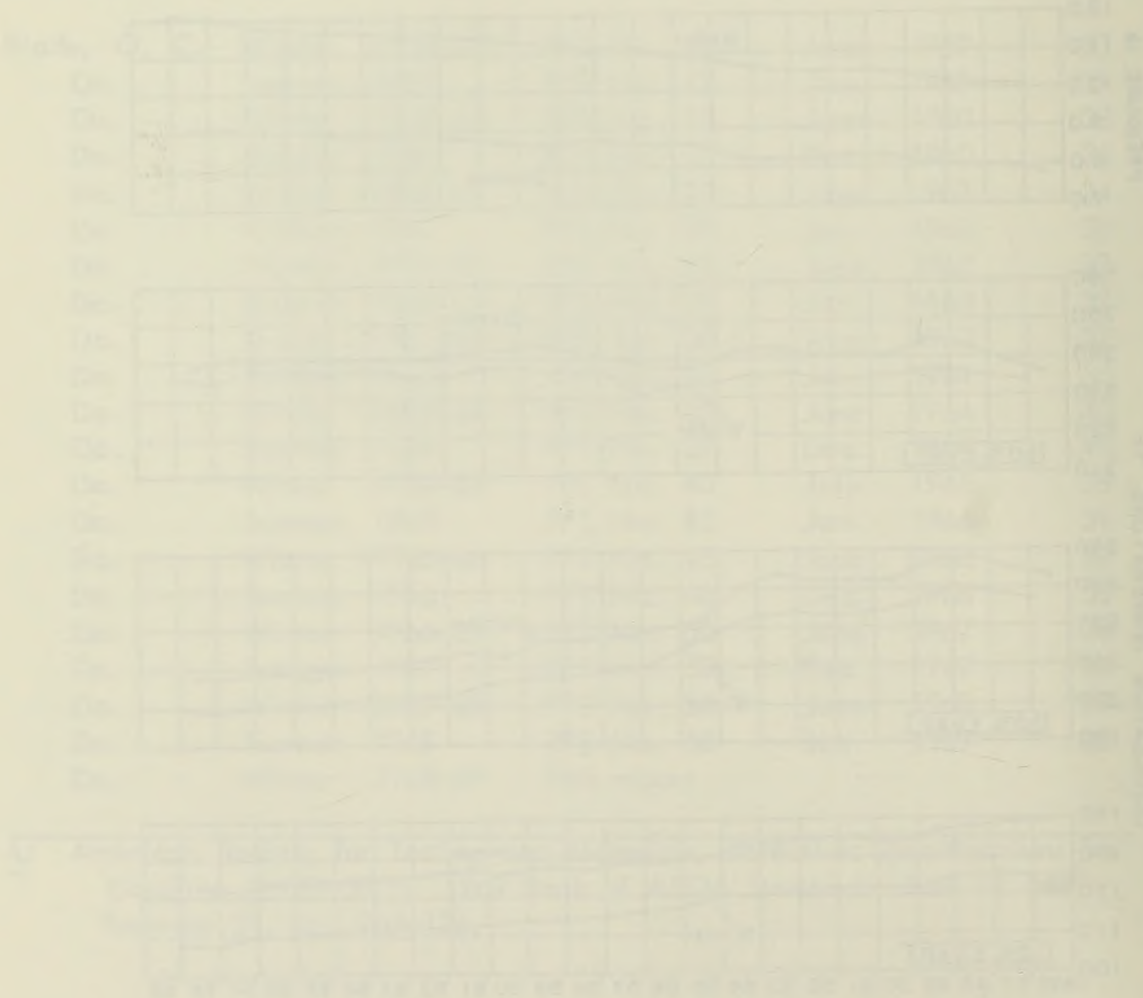


FIGURE 1.—Trends of Certain Characteristics of Regular-Price Gasolines.



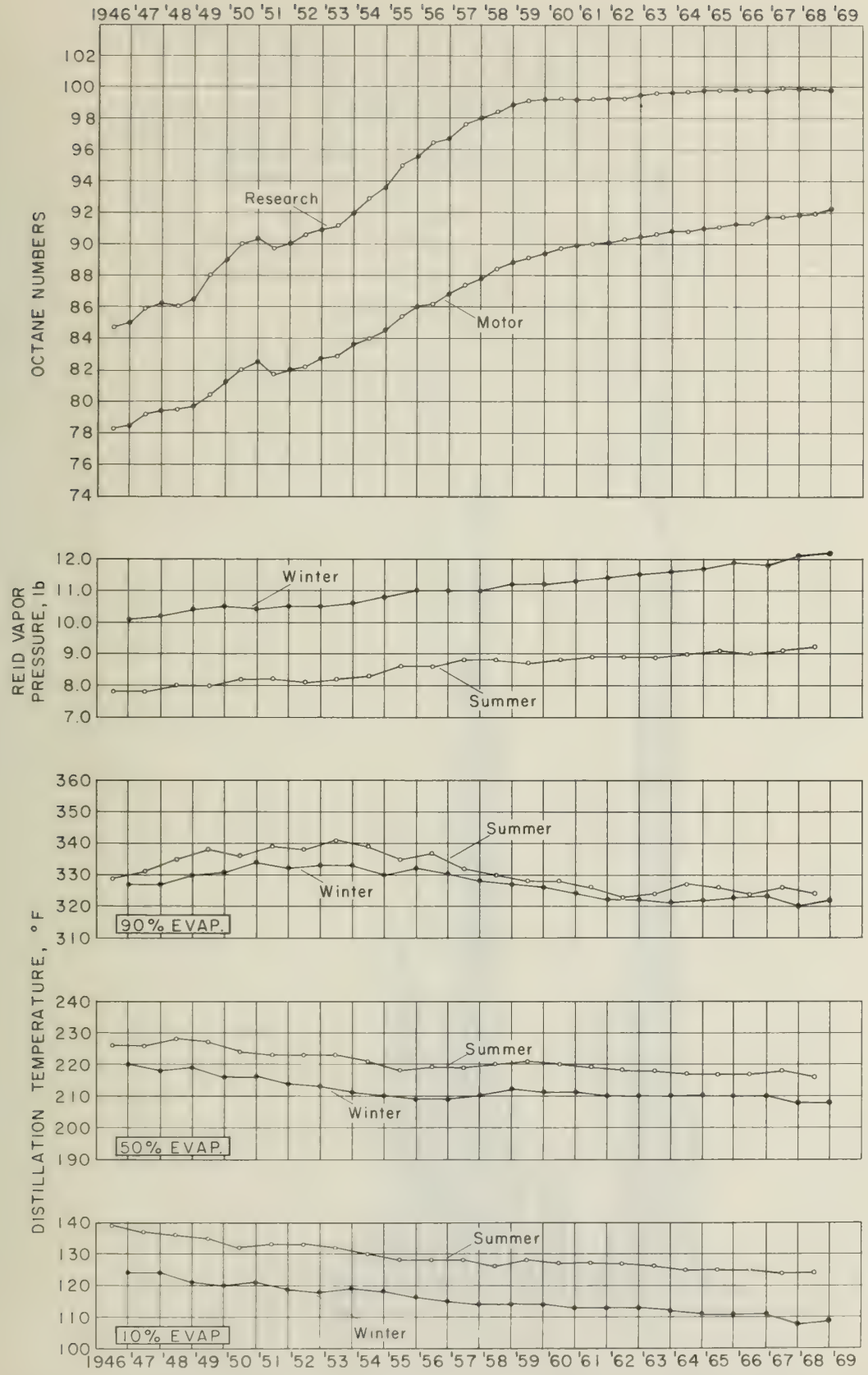


FIGURE 2.—Trends of Certain Characteristics of Premium-Price Gasolines.

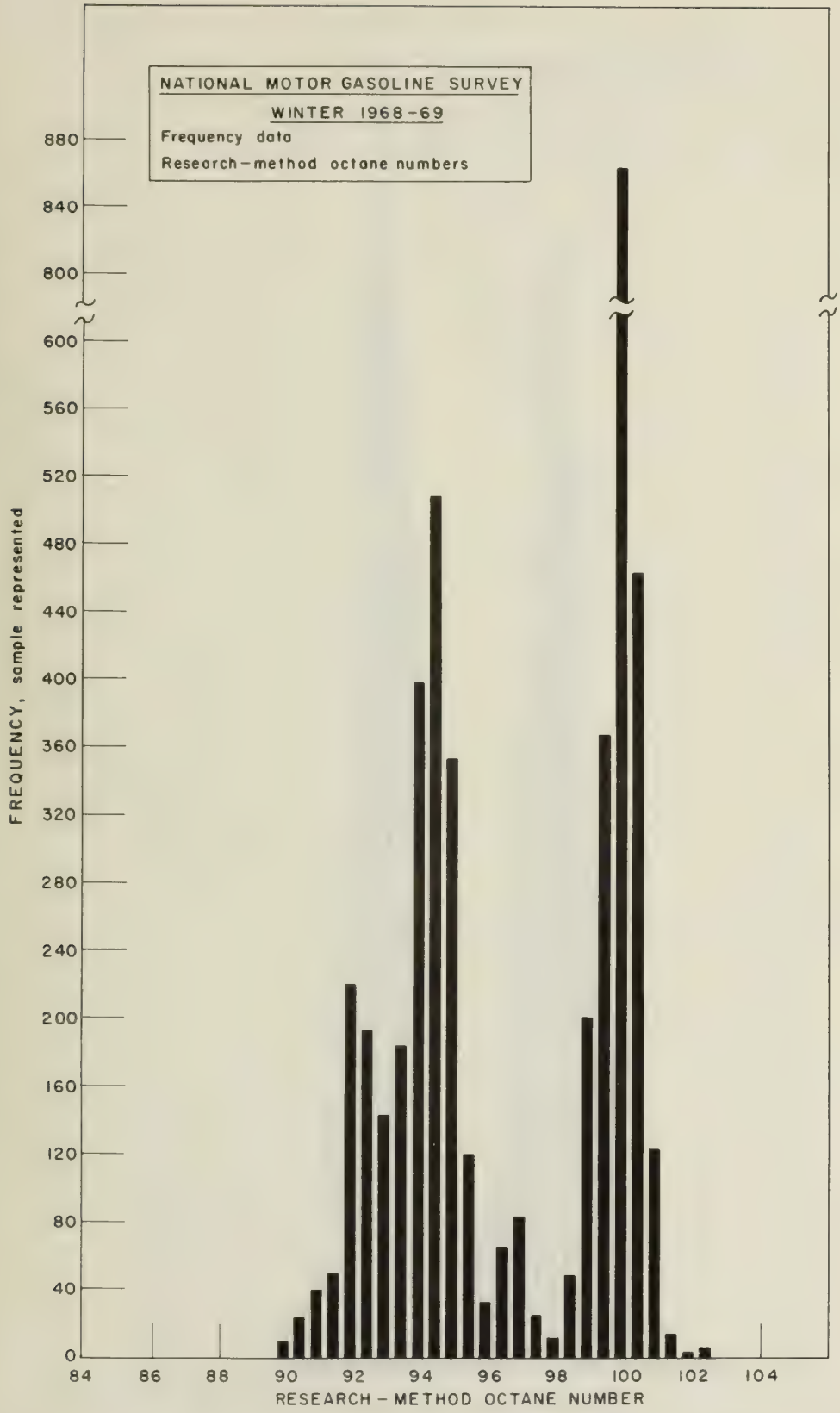


FIGURE 3.- Distribution of Research-Method Octane Numbers.

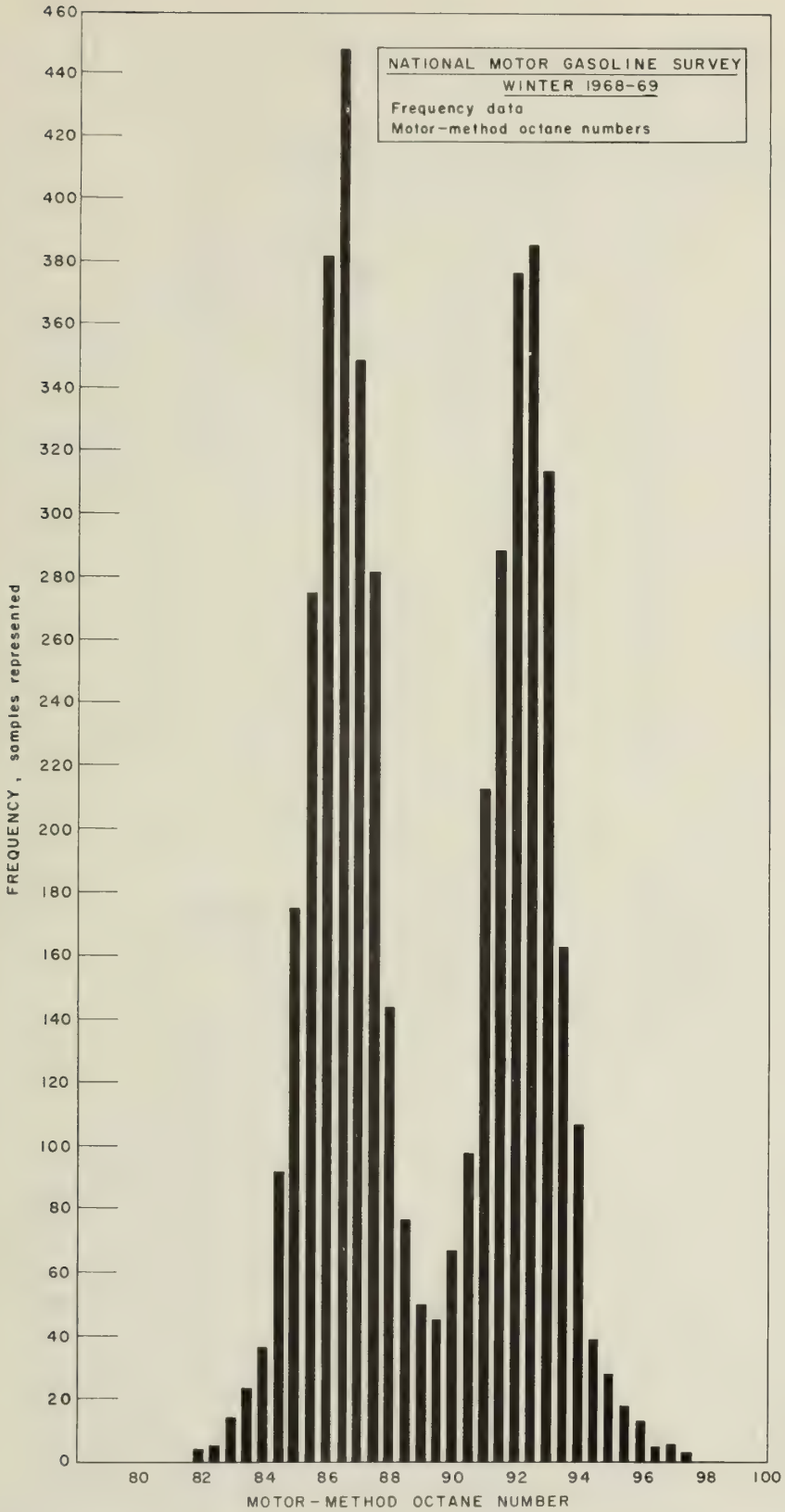


FIGURE 4.-Distribution of Motor-Method Octane Numbers.

TABLE 1. - Summary of values, motor gasoline survey, winter 1968-69

Test	ASTM method	Regular-price gasoline Average	Premium-price gasoline Average
Gravity ° API	D287	62.9	63.1
Corrosion No.	D130	1	1
Sulfur content wt percent	D1266	0.043	0.031
Gum mg per 100 ml	D381	1	1
Lead g per gal	D526	2.13	2.69
Octane number, Research	D908	93.8	99.8
Octane number, Motor	D357	86.3	92.2
Reid vapor pressure lb	D323	12.1	12.2
Distillation test on evaporated basis	D86		
Initial boiling point ° F		83	83
5 percent		96	95
10		108	109
20		129	132
30		151	157
50		200	208
70		256	253
90		336	322
95		369	354
End point		410	402
Residue vol percent		1.0	0.9
Distillation loss		2.1	2.2

TABLE 2. - Summary of values, motor gasoline survey, winter 1967-68

Test	ASTM method	Regular-price gasoline Average	Premium-price gasoline Average
Gravity ° API	D287	62.9	62.9
Corrosion No.	D130	1	1
Sulfur content wt percent	D1266	0.041	0.023
Gum mg per 100 ml	D381	1	1
Lead g per gal	D526	2.10	2.72
Octane number, Research	D908	93.8	99.9
Octane number, Motor	D357	85.9	91.9
Reid vapor pressure lb	D323	12.0	12.1
Distillation test on evaporated basis	D86		
Initial boiling point ° F		84	84
5 percent		96	94
10		108	108
20		129	130
30		151	156
50		199	208
70		255	251
90		335	320
95		368	352
End Point		411	401
Residue vol percent		0.9	0.9
Distillation loss		2.2	2.3

TABLE 3. - Motor gasoline survey, winter 1968-69
(Average values of different brands)

Northeast area: Maine, Massachusetts, New Hampshire, Vermont, and northern New York

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, †ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): Percent evaporated: IBP	5	10	20	30	50	70	90	95	End point	Percent: Resid.	Loss
1	2	61.7	0.040	1	2.18	94.3	85.8	11.8	79	85	103	125	148	200	258	346	376	418	1.0	3.5
2	5	64.7	.015	0	1.99	94.4	87.3	12.4	78	93	109	129	152	199	248	310	339	389	.8	2.7
3	4	64.1	.131	2	2.99	95.3	86.2	12.7	79	90	101	120	139	186	254	341	376	410	.9	3.2
4	4	61.7	.068	0	1.64	94.5	86.4	12.8	80	85	107	128	150	199	260	341	381	420	1.1	4.2
5	5	63.4	.040	2	1.78	95.4	86.5	12.2	80	93	108	129	149	198	260	340	377	413	.9	3.0
6	3	61.6	.039	1	1.40	95.2	86.1	13.2	80	93	108	130	154	204	264	344	372	402	1.0	2.0
7	4	63.6	.058	1	2.89	94.6	87.3	13.4	78	87	102	123	147	199	259	341	373	404	.9	3.2
8	6	61.6	.045	1	1.79	94.8	86.6	12.6	79	93	108	130	152	207	280	341	374	408	.9	3.2
9	1	59.7	.006	1	1.96	96.1	89.5	12.6	76	84	100	121	144	213	279	338	364	408	1.0	3.0
10	3	62.6	.047	1	1.74	95.0	86.3	13.4	80	95	108	128	149	204	280	352	376	400	1.0	1.0
11	5	63.0	.044	1	2.17	94.6	86.6	13.0	82	97	109	126	149	200	263	356	375	416	.9	2.4
12	3	64.5	-	-	-	95.0	87.0	11.6	87	96	108	124	142	186	256	340	371	423	.9	2.4
13	4	64.0	.016	1	1.97	94.5	87.9	12.9	80	93	106	127	149	199	260	341	374	416	.9	2.1
14	4	62.9	.030	1	.76	94.6	86.2	14.5	71	85	100	120	142	200	267	343	374	405	1.1	3.1
15	3	61.6	.022	1	1.81	94.4	87.2	12.6	75	83	100	124	149	210	274	352	381	418	1.0	3.0
AVERAGE		62.7	.043	1	1.93	94.8	86.9	12.8	79	90	105	126	148	200	264	342	372	410	1.0	2.8
SAMPLES	56																			

Premium-price gasoline

16	3	64.1	0.021	0	2.46	100.4	92.4	13.0	80	92	108	132	155	213	255	307	331	382	0.5	1.5
17	1	58.4	.006	0	3.09	100.8	93.4	14.5	78	86	99	120	140	201	272	333	359	400	1.0	2.0
18	5	65.1	.016	1	2.32	100.0	91.4	12.9	77	90	106	127	150	205	258	324	360	403	1.0	3.0
19	4	62.7	.020	1	3.35	100.7	92.9	13.4	77	87	103	126	152	217	267	324	351	388	.9	2.6
20	3	60.7	.023	1	2.19	101.1	90.8	12.8	81	94	108	131	155	216	257	321	342	398	.4	1.6
21	5	63.2	.031	1	2.07	100.8	91.7	12.0	79	93	110	133	158	210	255	320	351	400	.9	2.1
22	5	60.4	.018	1	2.29	100.1	91.5	13.3	80	92	108	129	152	206	263	332	365	415	.9	2.8
23	4	55.4	.011	0	* .00	100.2	89.4	12.5	79	94	104	130	160	225	258	312	341	372	1.1	2.4
24	5	64.0	.018	1	2.73	100.1	91.7	12.7	79	96	110	131	155	203	251	316	348	396	.9	2.1
25	1	63.4	.024	0	2.77	100.4	90.9	12.7	76	80	100	124	152	207	251	336	376	412	1.0	4.0
26	3	61.5	.018	0	2.11	100.0	91.4	12.5	75	79	98	123	149	208	264	340	378	420	1.0	4.0
27	4	68.7	.015	1	2.06	100.1	92.0	14.2	76	90	104	124	144	192	242	312	345	385	.8	3.0
28	4	59.3	.012	1	3.02	100.6	92.7	12.8	79	86	103	125	152	221	271	327	347	401	.8	2.8
29	3	65.5	-	-	-	100.0	91.4	10.8	90	101	110	128	147	204	253	314	350	413	1.0	2.0
30	5	64.0	.023	1	2.61	100.9	91.5	13.8	80	87	103	124	149	203	248	332	351	412	.9	3.1
AVERAGE		62.4	.018	1	2.54	100.4	91.7	12.9	79	90	105	127	151	209	258	323	353	400	.9	2.6
SAMPLES	55																			

† Research octane numbers above 100 determined by ASTM D1656. *Not included in average for lead.

District 2

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Mid-Atlantic Coast area: Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, central and southern New York, and eastern Pennsylvania

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
31	23	62.3	0.062	1	2.32	94.4	86.6	13.2	79	91	104	125	147	200	265	354	386	422	0.9	2.4
32	20	63.1	.055	1	1.41	95.2	85.4	13.1	81	92	104	124	145	196	269	352	377	412	.9	2.5
33	4	62.1	.036	1	2.29	95.1	86.6	12.7	84	104	117	137	158	201	259	331	356	402	.8	1.5
34	12	65.8	.024	1	1.95	95.0	88.3	12.2	87	95	104	118	133	178	251	333	366	429	.9	2.1
35	25	62.9	.027	2	2.04	94.7	86.9	11.8	83	98	113	135	158	207	259	326	353	396	1.0	1.8
36	13	62.0	.033	2	1.24	94.9	85.9	13.7	76	85	98	118	141	199	265	334	360	391	.8	2.3
37	3	62.7	-	-	1.98	94.3	86.6	12.9	80	89	103	127	150	206	269	362	392	424	1.0	1.5
38	10	62.5	.060	3	1.93	94.9	86.1	12.7	80	94	107	127	150	200	265	356	385	412	1.0	1.6
39	18	63.7	.086	2	2.54	95.5	86.0	12.5	81	94	108	127	147	193	254	342	372	414	.9	2.3
40	3	63.0	-	-	2.03	94.4	86.6	13.3	82	94	106	126	149	207	274	360	390	428	.6	2.9
41	26	61.9	.042	2	1.77	94.6	86.7	12.9	81	94	106	126	149	206	275	346	374	414	1.0	2.1
42	23	62.6	.044	2	1.99	94.6	86.4	13.0	81	94	106	125	148	199	264	356	386	421	1.0	2.2
43	20	63.5	.024	1	2.07	94.5	87.1	12.4	79	96	109	130	150	200	258	346	380	415	1.0	2.0
44	10	64.0	.019	1	2.28	94.9	88.0	12.5	81	97	109	130	151	198	255	332	359	401	.8	1.5
45	17	62.8	.044	3	2.12	94.7	86.7	12.1	80	93	106	126	149	197	261	345	376	413	.9	2.3
46	23	62.5	.056	3	1.58	94.8	86.1	13.4	78	90	103	125	149	202	258	345	375	413	1.0	2.7
47	18	62.6	.044	2	2.03	94.9	86.8	12.6	81	93	107	128	151	200	257	338	375	418	.9	2.6
48	22	61.4	.029	2	1.47	94.5	86.8	13.2	80	91	104	126	151	214	278	354	383	416	1.0	2.4
AVERAGE		62.9	.043	2	1.95	94.8	86.6	12.8	81	94	106	127	149	200	263	345	375	413	.9	2.2
SAMPLES	290																			

District 2 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Mid-Atlantic Coast area: Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, central and southern New York, and eastern Pennsylvania

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number: Research, †ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
49	10	62.5	0.059	4	2.32	100.8	91.6	13.1	81	93	106	129	156	213	254	316	344	391	0.7	1.7
50	3	63.0	-	-	2.92	100.6	92.8	14.3	80	95	108	132	162	220	264	348	380	410	1.0	1.0
51	13	61.7	.020	1	2.54	100.6	90.9	13.7	79	90	102	122	147	202	247	308	334	386	.7	2.0
52	25	63.4	.024	2	2.54	100.1	91.8	12.1	82	97	112	135	161	213	257	317	343	403	.9	2.3
53	11	65.1	.021	3	2.60	100.5	92.8	12.0	87	97	106	121	139	197	247	312	360	440	.9	1.9
54	4	63.2	.040	2	2.65	100.5	91.3	12.7	83	95	109	131	152	205	258	329	356	401	.9	1.6
55	20	62.2	.037	1	1.88	100.8	90.8	12.9	81	90	104	128	156	213	252	307	331	369	.9	2.6
56	23	60.0	.028	1	3.05	99.8	91.7	13.4	78	89	103	123	148	214	271	333	361	414	.9	2.1
57	21	61.5	.017	2	2.00	100.0	91.5	13.1	80	91	104	126	154	217	264	326	357	406	.9	2.2
58	19	62.0	.013	2	2.41	100.2	92.6	13.2	81	93	106	127	151	208	263	327	354	402	1.0	2.3
59	23	65.9	.027	2	2.27	100.5	91.9	14.1	78	89	100	120	141	196	247	313	337	387	.9	3.0
60	17	61.2	.023	2	2.73	100.2	91.5	13.1	80	89	106	130	157	211	259	326	352	394	.8	3.2
61	10	63.7	.017	1	2.47	100.6	92.6	12.8	77	91	105	125	147	198	249	315	344	398	1.0	1.7
62	20	61.0	.024	2	2.64	100.4	92.3	12.4	80	95	110	132	157	213	264	331	360	408	.9	2.0
63	23	63.2	.025	1	2.56	100.8	91.7	13.3	80	91	104	126	153	209	253	330	363	411	.9	2.2
64	26	63.9	.026	1	2.44	100.2	92.0	13.2	78	92	105	126	148	206	254	316	347	399	.8	2.3
65	3	63.8	-	-	2.54	101.0	92.2	13.9	74	92	104	127	154	209	249	328	368	416	.7	1.8
66	18	59.1	.015	3	* .00	100.6	90.3	13.0	83	95	107	131	161	219	256	322	349	386	1.0	1.9
AVERAGE		62.6	.026	2	2.50	100.5	91.8	13.1	80	92	106	127	152	209	255	322	352	401	.9	2.1
SAMPLES	289																			

† Research octane numbers above 100 determined by ASTM D1656. * Not included in average for lead.

District 3

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Southeast area: North Carolina, South Carolina, Georgia, Florida, Alabama, and eastern Tennessee

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86										
						Research, ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)										Percent
									IBP	Percent evaporated								End point	Resid.	Loss
										5	10	20	30	50	70	90	95			
67	6	62.7	0.012	2	2.26	94.6	87.3	11.4	86	106	119	142	165	211	262	328	359	401	1.0	1.3
68	14	62.3	.029	2	2.72	93.9	86.9	10.7	84	104	118	139	161	207	261	342	378	416	1.0	1.5
69	13	63.2	.025	0	1.57	94.4	86.4	12.1	84	97	109	130	151	199	254	350	384	416	.7	1.6
70	9	62.5	.034	2	1.96	94.3	86.5	12.1	84	96	108	127	148	198	257	332	368	413	.8	1.5
71	4	60.0	.019	2	1.52	94.7	86.7	10.0	84	99	111	130	151	202	259	340	367	402	.9	1.4
72	3	60.7	.065	3	2.91	94.5	86.5	11.2	84	100	115	137	161	213	269	344	378	417	.9	2.1
73	3	63.3	.032	2	2.07	94.1	86.4	12.8	80	96	107	124	144	190	250	340	378	428	.7	1.8
74	12	63.4	.030	1	2.12	95.4	85.8	11.0	84	99	110	128	144	183	247	340	376	413	1.1	1.6
75	16	64.3	.027	1	2.31	94.5	87.4	11.1	89	100	112	130	150	196	259	329	358	405	1.0	1.9
76	16	61.7	.034	1	2.36	94.5	87.0	10.9	83	100	115	136	158	211	267	342	375	413	1.0	1.5
77	3	60.5	.020	2	1.57	94.6	86.6	12.4	84	96	108	132	158	210	266	340	378	413	1.2	1.8
78	13	62.6	.036	1	2.36	94.5	86.5	11.6	84	99	113	135	159	206	265	355	384	420	.9	1.5
79	9	61.9	.023	1	1.83	94.8	86.7	12.7	82	98	110	132	157	206	267	344	378	413	1.0	1.7
80	16	63.0	.027	1	2.24	94.0	86.4	11.5	83	98	113	135	156	206	264	350	380	417	1.0	1.9
81	18	61.8	.023	2	2.40	94.4	86.5	11.0	87	102	117	141	166	215	266	334	369	409	1.0	1.4
82	3	67.0	.022	1	1.63	94.1	88.3	12.3	84	96	108	128	145	186	242	330	366	408	.9	1.1
83	12	62.4	.026	2	2.07	94.5	87.6	11.4	86	100	113	135	155	204	263	348	382	418	1.0	1.5
84	13	61.7	.027	1	1.84	94.4	86.4	11.6	84	100	114	136	160	209	267	351	384	416	.9	1.5
85	1	61.4	.015	2	2.15	94.2	86.4	10.8	80	94	109	129	151	203	254	317	346	404	1.0	2.0
AVERAGE		62.4	.028	2	2.10	94.4	86.8	11.5	84	99	112	133	155	203	260	340	373	413	.9	1.6
SAMPLES	184																			

District 3 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Southeast area: North Carolina, South Carolina, Georgia, Florida, Alabama, and eastern Tennessee

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number: Research, †ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
86	15	65.2	0.020	1	2.80	100.0	93.1	11.5	83	99	113	135	157	205	250	320	357	403	1.0	1.6
87	16	64.4	.014	1	2.53	100.4	92.7	11.8	90	99	110	126	145	198	253	316	356	414	1.0	1.7
88	11	56.3	.008	1	* .00	100.8	90.4	11.5	80	97	112	138	167	224	263	327	354	391	1.0	1.7
89	3	62.3	.029	2	2.89	100.4	91.9	12.0	80	98	112	134	164	214	264	325	364	400	.8	1.2
90	4	61.6	.016	1	3.35	100.4	92.8	11.2	85	98	112	135	159	223	277	330	354	403	1.0	1.5
91	4	58.7	.012	1	2.10	100.1	92.2	10.3	88	105	121	145	171	221	263	330	364	405	1.0	2.0
92	9	62.2	.017	2	3.03	100.5	92.3	12.0	83	102	116	140	165	214	262	337	366	405	.8	1.3
93	11	61.5	.010	1	2.57	100.3	92.6	11.7	82	97	109	132	158	208	252	318	346	388	.8	1.7
94	16	61.0	.016	2	2.99	100.1	92.6	11.0	83	102	115	137	160	214	268	342	373	411	1.0	1.7
95	6	65.2	.017	2	2.75	100.4	92.3	11.9	84	102	113	132	152	199	242	308	344	385	.8	1.0
96	1	58.5	.007	1	3.27	100.1	91.7	11.7	82	95	112	137	166	218	257	311	348	384	1.0	2.0
97	14	67.3	.014	1	2.93	100.0	93.0	11.9	81	98	112	132	156	204	251	316	347	389	.9	1.3
98	12	63.1	.011	1	2.82	100.3	92.4	11.8	86	101	114	134	156	203	253	336	372	413	.9	1.3
99	3	66.2	.030	1	2.13	100.6	93.2	12.4	82	90	102	122	138	188	242	308	346	412	.7	1.8
100	19	62.3	.012	2	2.96	100.1	92.0	10.9	87	101	116	139	162	210	258	324	358	402	1.0	1.4
101	16	62.3	.014	1	3.28	100.1	92.6	11.8	85	99	113	134	158	214	268	341	376	412	1.0	1.5
102	9	63.3	.020	1	2.72	100.0	92.0	11.9	82	94	108	130	155	207	254	322	356	392	1.0	1.7
103	13	61.5	.031	1	2.99	100.5	92.0	11.7	83	97	112	134	159	213	258	336	367	406	1.0	1.4
104	3	63.9	.015	2	2.83	100.1	92.2	12.3	81	96	106	126	147	200	250	311	340	368	.9	1.1
AVERAGE		62.5	.016	1	2.83	100.3	92.3	11.6	84	98	112	134	158	209	257	324	357	399	.9	1.5
SAMPLES	185																			

† Research octane numbers above 100 determined by ASTM D1656. *Not included in average for lead.

District 4

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Appalachian area: Ohio, West Virginia, western New York, western Pennsylvania, eastern Kentucky, and a small portion of Maryland

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86										
						Research, ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)										Percent
									IBP	Percent evaporated								End point	Resid.	Loss
										5	10	20	30	50	70	90	95			
105	3	60.2	-	-	2.35	94.9	87.3	13.7	76	84	100	124	152	210	274	358	390	438	0.7	3.3
106	9	62.4	0.017	2	1.69	95.4	86.5	12.7	82	92	105	125	148	204	261	338	367	406	.8	2.2
107	14	63.8	.012	1	2.26	94.1	87.2	11.7	83	99	114	136	159	206	254	321	346	399	.9	2.0
108	3	64.6	-	-	2.08	94.1	88.4	12.8	78	85	102	127	148	195	242	302	327	370	.8	2.7
109	3	62.3	-	-	2.79	94.3	87.6	13.5	74	90	104	126	152	206	271	353	388	430	.9	1.1
110	4	61.9	.022	1	1.69	94.9	86.1	12.9	82	96	108	129	153	206	265	349	383	427	.9	2.4
111	13	63.1	.023	1	1.68	95.2	87.0	14.6	77	87	102	127	154	206	268	338	365	398	.8	3.5
112	9	64.3	-	-	-	95.0	87.4	12.1	88	98	108	124	142	192	260	340	371	426	1.1	2.3
113	3	63.7	-	-	2.70	93.6	87.9	12.2	82	94	110	136	160	202	238	286	312	348	.8	2.2
114	13	62.2	.025	1	1.77	94.9	87.1	12.5	82	94	108	129	151	204	263	344	374	417	.8	2.4
115	6	61.4	.015	1	2.35	95.0	86.8	12.0	90	99	109	126	148	207	258	324	353	390	1.0	1.0
116	10	63.3	.027	1	2.60	94.4	87.6	12.6	81	96	108	128	146	193	253	346	383	422	.8	2.2
117	13	61.6	.018	2	1.44	94.7	87.4	13.7	81	90	104	127	150	206	271	350	380	416	.8	2.7
118	5	62.9	.015	1	1.65	94.7	87.3	13.5	79	92	105	126	150	200	254	328	358	401	.7	2.3
119	6	63.4	.019	2	2.26	95.0	87.6	13.7	82	88	101	121	146	201	263	341	366	409	1.0	3.3
120	8	62.7	.046	2	2.13	94.4	87.0	12.3	80	97	111	130	154	204	267	351	384	426	.9	2.2
121	8	61.7	.035	1	2.33	94.6	87.4	12.3	81	94	106	126	149	201	264	345	377	424	.9	1.6
122	13	63.5	.022	1	2.13	94.2	87.1	13.3	80	94	108	128	151	203	258	334	363	409	.8	2.4
123	17	61.8	.024	1	1.89	94.6	87.1	12.3	82	96	110	130	152	207	272	347	379	418	.9	1.6
124	1	63.1	.020	1	1.85	95.0	86.4	13.4	83	90	100	118	144	200	264	340	370	416	1.0	2.0
AVERAGE		62.7	.023	1	2.09	94.7	87.2	12.9	81	93	106	127	150	203	261	337	367	410	.9	2.3
SAMPLES	161																			

District 4 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Appalachian area: Ohio, West Virginia, western New York, western Pennsylvania, eastern Kentucky, and a small portion of Maryland

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, †ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): Percent evaporated: IBP	5	10	20	30	50	70	90	95	End point	Percent: Resid.	Loss
125	12	65.8	0.024	2	2.37	100.5	92.2	14.8	77	86	98	119	143	195	242	306	338	383	0.7	3.4
126	9	65.4	-	-	-	99.8	92.5	12.5	89	98	108	125	145	206	253	322	358	420	1.0	2.3
127	4	60.5	.001	1	1.78	99.9	92.6	12.9	79	91	103	124	147	206	264	322	345	400	.8	2.2
128	3	63.2	-	-	2.95	100.3	92.4	13.2	78	90	104	126	152	206	256	338	368	404	.8	2.7
129	3	62.3	-	-	3.27	100.1	93.1	14.0	80	86	98	118	138	182	242	305	330	384	.7	2.3
130	14	60.4	.018	2	3.04	100.4	91.6	11.6	82	98	114	137	161	213	261	321	343	407	.9	2.1
131	9	64.1	.016	2	2.48	100.2	92.4	12.6	80	90	105	128	154	210	258	334	367	408	.9	2.2
132	3	65.6	-	-	3.00	100.8	94.0	14.8	74	84	100	122	152	214	256	320	354	410	.8	3.2
133	1	68.0	.008	0	2.85	100.0	93.8	13.9	77	85	97	117	141	197	239	305	345	403	1.0	2.5
134	17	65.8	.022	1	2.39	100.2	92.7	12.3	80	94	108	129	153	202	245	317	353	402	.7	2.0
135	13	63.1	.012	1	2.58	99.7	93.0	13.0	79	93	109	131	156	206	250	326	354	403	1.0	2.4
136	8	64.3	.012	1	2.78	100.3	93.2	12.2	79	94	109	134	161	213	254	322	352	406	.9	2.3
137	8	67.2	.023	1	2.85	100.3	92.9	12.9	78	92	105	125	146	196	246	316	349	397	.7	2.0
138	6	67.1	.016	2	3.09	100.5	93.7	14.5	80	86	99	118	141	196	241	308	353	398	1.0	2.6
139	5	66.8	.022	1	2.27	100.1	93.5	12.0	82	106	112	138	166	210	240	310	348	394	.8	1.7
140	12	60.6	.010	1	2.02	100.2	92.2	12.9	79	93	110	137	168	224	259	318	345	396	1.0	2.8
141	10	63.5	.017	1	3.06	100.4	93.3	12.6	79	92	107	131	158	213	258	335	369	413	.9	2.1
142	6	58.3	.014	0	* .00	100.4	90.0	12.1	83	99	110	131	162	222	256	322	345	380	.9	1.9
143	13	62.9	.017	1	2.58	100.4	93.3	13.0	78	91	106	130	156	211	255	331	364	411	.9	2.7
144	3	61.9	-	-	3.16	100.0	92.9	13.8	76	88	100	118	137	182	242	304	329	380	.6	1.9
AVERAGE		63.8	.015	1	2.70	100.2	92.8	13.1	79	92	105	127	152	205	251	319	350	400	.9	2.4
SAMPLES	159																			

† Research octane numbers above 100 determined by ASTM D1656. * Not included in average for lead.

District 5

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Michigan

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86										
						Research, ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)										Percent
									IBP	Percent evaporated								End point	Resid.	Loss
										5	10	20	30	50	70	90	95			
145	1	64.8	0.039	1	2.96	94.8	87.4	13.5	69	73	91	113	137	190	250	334	368	398	1.0	4.0
146	4	61.9	.023	1	1.49	94.6	87.3	13.7	78	90	99	122	148	204	269	352	387	427	.8	3.6
147	13	62.0	.036	1	2.75	94.8	86.6	12.4	81	96	112	136	160	212	265	338	373	414	.7	2.4
148	3	63.2	-	-	2.76	94.8	87.4	13.4	78	96	106	126	149	200	263	347	380	402	1.0	2.0
149	10	64.4	.041	0	2.29	94.7	87.5	13.3	79	92	106	126	149	199	256	335	368	421	.8	2.5
150	9	63.0	.030	1	1.88	94.5	87.1	13.6	81	95	109	129	152	203	259	335	366	413	.8	2.3
151	6	63.6	.060	2	2.80	95.1	87.3	13.6	80	90	102	121	143	197	263	343	376	415	.5	2.1
152	8	63.0	.055	1	1.81	95.1	86.4	13.6	80	90	106	123	148	202	262	338	369	414	.6	2.3
153	6	66.0	.036	1	2.79	94.0	87.5	12.7	81	95	110	131	153	202	252	329	364	407	.8	2.0
154	5	62.9	.057	1	2.31	94.6	86.3	13.1	80	90	104	126	149	202	264	347	384	425	.6	2.4
155	2	61.0	-	-	2.96	94.7	87.3	10.3	86	104	120	142	164	208	260	336	366	414	.8	1.2
156	3	63.0	-	-	2.21	94.6	86.8	13.9	80	94	106	128	155	205	257	334	366	416	.9	2.1
157	8	63.6	.055	1	2.34	95.3	85.9	12.7	81	94	109	130	152	200	251	320	347	391	.8	2.4
158	3	63.7	-	-	2.90	94.8	87.1	13.2	79	91	104	124	148	198	246	324	358	395	.6	2.9
159	2	63.3	-	-	2.44	94.2	87.1	11.2	84	98	110	130	146	184	248	350	386	426	.7	1.3
160	3	60.7	-	-	3.09	95.2	85.3	11.3	86	100	114	136	156	199	244	302	328	380	.7	2.3
161	1	64.2	.040	0	2.66	93.9	86.8	12.7	82	97	108	129	152	202	256	337	385	444	.5	1.5
162	2	63.4	.030	0	1.73	95.0	86.6	14.3	80	85	99	118	144	198	252	336	370	412	.5	3.5
163	1	64.9	.024	0	2.60	93.5	86.7	13.2	72	77	98	121	144	196	252	337	378	416	1.0	4.0
164	1	64.9	.044	1	2.32	94.9	86.5	14.0	72	76	94	114	136	188	256	338	370	400	1.0	4.0
AVERAGE		63.4	.041	1	2.45	94.7	86.8	13.0	79	91	105	126	149	199	256	336	369	412	.8	2.5
SAMPLES	91																			

District 5 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Michigan

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, †ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
165	5	63.4	0.020	1	2.30	99.7	92.2	12.8	76	84	106	134	164	215	253	320	350	406	0.7	3.3
166	6	64.2	.012	0	2.57	99.4	93.5	12.4	81	95	110	132	155	204	250	324	361	402	.8	2.5
167	8	65.7	.022	0	2.39	99.9	91.8	12.7	82	95	110	133	159	210	251	326	366	405	.7	2.3
168	6	66.5	.040	1	3.03	100.3	93.7	13.9	78	91	104	125	151	208	246	312	348	407	.5	2.0
169	9	67.7	.030	1	2.23	100.0	93.4	13.2	82	96	112	136	163	210	251	324	360	404	.7	2.4
170	10	61.7	.035	1	2.48	100.2	92.7	12.8	79	93	110	134	162	214	258	330	364	414	.9	2.7
171	3	68.0	-	-	2.82	100.2	94.5	13.8	80	90	108	136	168	216	246	334	376	412	.6	2.4
172	13	62.9	.019	0	3.14	100.0	91.2	12.3	82	97	113	136	160	207	255	330	365	422	.9	2.5
173	4	61.1	.020	1	2.08	99.9	92.1	14.4	79	88	105	132	162	220	260	317	345	395	.7	3.5
174	1	70.2	.031	0	3.75	99.8	93.9	14.1	80	87	98	116	138	198	238	310	353	416	1.0	2.0
175	1	67.9	.024	0	2.92	99.9	93.8	13.7	76	82	94	115	144	206	243	313	352	402	1.0	3.0
176	1	64.2	.008	0	2.81	100.0	93.3	12.2	82	93	107	134	164	212	250	323	357	408	1.0	2.0
177	2	66.2	.020	0	2.50	100.2	92.6	15.4	76	80	95	116	140	194	242	306	336	389	.3	3.7
178	1	64.5	.020	0	3.12	99.9	94.7	12.6	83	93	108	134	164	213	252	332	370	422	.3	2.7
179	3	60.7	-	-	3.11	99.4	91.1	10.5	84	106	119	141	164	209	252	318	350	408	.8	1.2
180	4	61.8	.030	0	3.41	100.1	93.6	13.2	83	98	112	136	161	214	261	334	372	418	.5	1.5
181	3	66.1	-	-	2.64	100.3	92.3	13.5	84	92	110	142	172	218	253	340	370	400	.8	3.2
182	8	63.7	.028	1	2.68	99.9	91.9	12.3	81	94	108	130	152	201	248	315	355	394	.9	2.5
183	3	67.7	-	-	2.31	99.8	92.0	12.0	84	97	112	134	157	204	243	320	358	410	.7	1.3
184	2	62.1	-	-	2.92	99.7	92.3	11.6	80	101	117	144	173	220	252	314	346	400	.7	2.3
AVERAGE		64.8	.024	0	2.76	99.9	92.8	13.0	81	93	108	132	159	210	250	322	358	407	.7	2.5
SAMPLES	93																			

† Research octane numbers above 100 determined by ASTM D1656.

District 6

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

North Illinois area: Northern Indiana, northern Illinois, eastern Iowa, and Wisconsin

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86									
						Research, ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)										
										Percent evaporated								End point	Percent
									IBP	5	10	20	30	50	70	90	95		Resid. Loss
185	1	63.9	0.024	2	2.20	94.0	87.0	12.3	84	91	102	126	141	190	246	320	350	402	1.0 2.0
186	12	62.9	.027	1	2.80	94.7	86.8	12.7	81	94	107	129	154	205	260	334	366	403	.9 2.4
187	5	62.7	.040	3	1.98	94.5	86.5	13.3	80	91	104	125	150	204	262	340	375	415	1.0 2.3
188	4	63.4	.036	2	2.76	95.5	87.4	12.2	81	92	106	127	149	202	260	332	365	408	1.0 1.6
189	5	63.1	.033	1	2.20	94.2	87.1	12.5	82	91	102	121	146	200	260	339	371	404	1.0 2.2
190	4	63.4	.032	1	2.88	95.5	87.5	12.0	83	93	104	123	145	197	254	322	353	395	1.0 2.3
191	8	62.6	.053	2	2.42	94.8	86.7	12.8	84	93	105	125	150	199	255	334	370	414	.9 2.1
192	6	66.5	.044	1	2.59	94.1	87.4	12.6	84	92	100	115	130	167	216	327	366	412	1.0 1.6
193	11	64.1	.030	1	2.31	94.6	87.9	13.0	81	92	104	123	144	193	252	327	360	412	1.0 2.3
194	7	62.8	.052	1	1.87	94.9	86.2	12.4	81	90	102	123	147	200	254	323	352	396	.9 2.6
195	1	62.9	.016	0	2.97	95.0	88.3	12.5	80	86	97	116	138	202	274	346	376	423	1.0 2.0
196	11	64.0	.019	0	2.23	93.9	87.2	12.4	83	93	105	123	144	193	247	320	349	387	.9 2.1
197	3	62.5	.078	1	3.15	94.4	87.2	12.4	82	91	103	125	149	196	246	312	340	385	1.0 2.0
198	11	64.6	.030	2	2.07	95.0	86.5	12.4	84	94	105	123	144	200	260	338	370	414	1.0 2.4
199	4	64.4	-	1	2.13	94.2	86.8	12.5	83	94	103	119	138	190	253	339	373	410	.9 1.6
200	15	63.3	.064	2	2.59	95.0	86.7	12.4	83	94	105	127	153	197	251	327	358	393	.9 2.5
201	9	62.9	.049	1	2.22	95.1	86.6	12.0	83	93	104	123	146	199	254	329	361	404	1.0 2.1
AVERAGE		63.5	.039	1	2.43	94.7	87.0	12.5	82	92	103	123	145	196	253	330	362	405	1.0 2.1
SAMPLES	117																		

District 6 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

North Illinois area: Northern Indiana, northern Illinois, eastern Iowa, and Wisconsin

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86										
						Research, ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)										
									IBP	Percent evaporated								End point	Percent
										5	10	20	30	50	70	90	95		Resid. Loss
202	1	65.1	0.001	1	2.96	99.4	93.0	11.8	83	93	106	128	154	206	243	299	329	396	1.0 2.0
203	7	63.4	.023	1	2.62	99.8	92.9	12.4	84	90	100	122	147	205	246	313	343	397	1.0 2.4
204	11	62.0	.020	1	2.39	99.8	93.4	13.1	81	90	103	126	154	211	253	322	351	411	1.0 3.1
205	8	61.8	.013	0	3.22	99.8	93.7	12.6	81	93	105	126	151	206	255	333	367	413	.8 2.1
206	8	66.5	.028	1	2.64	99.9	93.1	13.0	81	91	101	119	142	195	236	311	350	395	.9 1.8
207	4	64.8	.012	1	2.97	99.9	93.7	12.1	85	93	107	131	161	210	244	304	336	390	1.0 2.3
208	5	62.4	.012	1	2.74	99.4	93.0	12.4	81	92	105	130	160	212	253	319	351	398	1.0 2.5
209	5	65.3	.008	1	2.94	99.7	93.1	12.1	82	94	106	128	152	204	247	314	346	397	.8 1.8
210	5	63.4	.007	1	2.29	99.4	91.9	13.3	82	95	109	133	159	210	253	325	347	402	.8 2.7
211	13	62.6	.018	1	3.00	99.4	91.8	12.8	83	95	107	130	154	203	247	320	358	407	1.0 2.6
212	1	61.7	.008	0	3.30	100.0	93.2	12.0	80	88	100	122	149	206	257	334	362	417	1.0 2.0
213	8	63.7	.027	0	2.57	99.7	92.5	12.0	82	91	103	125	152	208	249	317	350	396	.9 2.2
214	15	62.0	.017	1	2.78	99.8	92.3	12.3	82	93	107	128	152	203	250	318	348	389	.9 2.5
215	4	67.5	-	0	2.67	99.4	93.3	12.5	84	93	103	121	143	198	238	321	368	401	1.0 2.5
216	11	65.6	.012	1	2.88	99.7	93.2	12.4	84	93	105	124	148	206	256	330	367	418	1.0 2.3
217	3	64.6	.019	1	3.15	99.6	93.5	12.5	81	92	106	126	149	195	238	298	325	374	.8 2.2
218	12	65.6	.011	1	2.51	98.9	93.7	12.7	82	94	107	131	161	209	247	321	354	392	.8 2.3
AVERAGE		64.0	.015	1	2.80	99.6	93.0	12.5	82	92	105	126	152	205	248	318	350	400	.9 2.3
SAMPLES	121																		

District 7

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Central Mississippi area: Western Kentucky, southern Indiana, southern Illinois, and eastern Missouri

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
219	3	62.9	0.040	2	2.84	94.0	87.6	12.1	84	100	116	140	166	216	268	344	370	406	0.8	1.2
220	11	64.9	.036	3	2.56	94.0	86.6	12.5	81	98	113	137	161	207	252	319	349	391	.8	2.6
221	3	64.2	-	-	2.43	94.1	87.6	13.2	82	98	108	128	150	194	246	346	384	420	1.4	1.6
222	3	62.4	.034	1	2.92	95.0	88.1	12.9	74	91	102	122	146	206	280	352	386	410	1.0	1.0
223	3	63.9	-	-	2.73	93.9	87.2	13.8	79	92	103	120	141	195	251	319	344	380	.8	2.7
224	7	62.4	.023	2	2.09	94.4	87.5	12.0	82	97	111	135	159	213	266	340	370	413	.8	1.5
225	7	63.4	.088	2	2.40	94.6	86.9	12.9	80	94	106	127	150	198	248	319	352	388	.8	2.6
226	2	64.1	.028	2	2.10	95.2	88.1	12.7	80	94	107	129	156	208	248	312	340	390	.7	1.8
227	3	63.7	-	-	2.76	94.3	87.9	12.3	81	100	113	134	154	196	250	350	390	430	.9	2.1
228	7	62.8	-	-	2.74	94.9	87.5	13.0	80	96	110	130	151	203	264	350	386	422	.9	2.0
229	5	63.5	.042	0	2.06	94.8	87.2	13.7	78	90	103	124	147	205	271	341	370	408	1.1	2.7
230	1	63.8	-	-	2.30	94.0	86.7	11.9	78	86	93	111	128	179	237	325	367	417	.9	1.1
231	5	63.3	.029	3	2.30	94.7	86.4	12.7	79	90	100	116	134	183	250	349	384	424	.9	2.2
232	10	64.3	.053	2	2.03	94.5	87.6	12.8	80	95	108	128	151	199	255	339	374	419	.9	1.8
233	10	63.0	.054	1	2.33	94.4	87.4	12.2	79	97	110	131	153	204	264	340	372	408	1.1	1.8
234	3	64.1	-	-	2.87	94.4	88.1	12.5	76	92	106	126	150	199	253	333	362	400	1.0	2.0
235	6	65.8	-	-	2.14	95.0	86.8	13.5	84	91	101	118	138	194	260	341	373	423	1.0	2.6
236	6	62.5	.059	2	3.26	95.1	87.9	12.5	81	100	113	135	160	219	278	347	378	416	.9	1.2
237	3	61.7	.031	1	2.98	93.8	87.8	9.0	88	112	126	148	172	220	278	352	379	410	.8	1.2
238	2	64.7	-	-	2.49	94.2	85.9	12.8	78	88	98	114	132	187	256	343	375	418	1.1	1.9
AVERAGE		63.6	.043	2	2.52	94.5	87.3	12.6	80	95	107	128	150	201	259	338	370	410	.9	1.9
SAMPLES	100																			

District 7 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Central Mississippi area: Western Kentucky, southern Indiana, southern Illinois, and eastern Missouri

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86										Percent	
						Research, †ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)											
									IBP	Percent evaporated								End point	Resid.	Loss
										5	10	20	30	50	70	90	95			
239	1	59.2	-	-	2.95	99.8	93.1	12.4	80	90	105	133	165	220	257	308	333	393	1.0	2.5
240	5	68.2	0.027	0	2.88	100.2	93.5	15.0	80	90	101	119	141	196	240	309	343	391	.8	2.5
241	7	61.3	-	-	3.05	99.6	92.0	12.4	80	93	109	134	161	215	267	336	369	412	1.0	2.4
242	3	57.3	-	-	3.24	100.6	91.8	13.0	74	85	105	137	172	236	288	356	382	430	1.0	3.0
243	2	68.1	.025	1	2.70	100.2	95.1	13.8	83	101	116	139	164	206	233	301	340	388	.3	2.7
244	8	64.2	.021	2	2.64	100.0	92.3	12.3	80	93	102	124	148	198	244	314	350	391	.9	2.8
245	7	60.1	.028	3	2.72	100.4	92.0	12.7	81	96	112	139	166	219	262	332	365	409	.9	2.4
246	3	62.0	-	-	2.99	98.7	92.7	13.5	78	91	101	126	156	209	255	316	345	378	.8	1.7
247	3	66.9	.020	2	3.15	100.3	93.9	13.1	81	94	108	132	158	208	240	300	330	390	.7	1.3
248	3	57.0	-	-	3.30	100.8	91.8	13.2	76	90	109	138	172	232	284	351	379	420	.8	2.2
249	11	61.4	.020	1	3.19	99.9	91.5	11.5	80	98	112	134	156	202	254	321	351	398	.8	2.1
250	3	64.1	.040	1	3.93	100.4	92.7	12.4	82	101	119	146	174	223	264	324	348	370	.9	1.6
251	1	68.2	-	-	3.12	99.0	94.3	12.4	84	92	106	129	154	200	238	313	351	405	.9	2.6
252	3	65.2	.039	0	3.81	100.3	92.7	12.4	79	98	114	139	165	209	248	314	344	368	1.0	2.0
253	6	65.2	.021	1	3.56	100.3	93.7	12.9	81	94	106	127	151	205	245	324	360	402	.7	1.9
254	6	69.0	-	-	3.14	99.8	94.2	13.8	85	94	103	119	141	201	251	329	368	424	.9	2.3
255	3	63.8	-	-	2.98	100.2	92.4	12.5	74	90	104	126	152	204	251	336	364	400	1.0	1.5
256	10	64.2	.023	1	2.79	99.9	93.6	13.2	79	93	108	131	155	209	251	319	352	393	.7	2.2
257	10	61.9	.032	3	2.32	100.2	92.9	13.1	79	95	109	133	160	213	259	329	362	412	.8	2.0
258	5	62.3	.019	1	2.90	100.1	92.3	13.9	79	89	102	122	145	200	251	321	354	391	1.0	2.3
AVERAGE		63.5	.026	1	3.07	100.0	92.9	13.0	80	93	108	131	158	210	254	323	355	398	.8	2.2
SAMPLES	100																			

† Research octane numbers above 100 determined by ASTM D1656.

District 8

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Lower Mississippi area: Mississippi, Louisiana, eastern and southern Arkansas, and western Tennessee

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86										
						Research, ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)										Percent
									IBP	Percent evaporated								End point	Resid.	Loss
										5	10	20	30	50	70	90	95			
259	10	62.4	0.026	0	2.35	94.3	87.1	12.3	82	93	106	126	151	202	252	333	366	411	1.1	1.9
260	16	64.7	.059	1	2.24	95.3	86.1	11.1	86	98	109	123	136	172	233	326	362	405	1.0	1.5
261	6	62.2	.015	-	2.42	93.9	86.9	12.2	84	97	114	140	165	214	269	357	387	410	.9	1.7
262	3	63.6	.023	-	2.79	94.4	88.6	12.9	80	92	105	122	142	190	247	359	388	411	1.0	1.5
263	16	62.7	.039	3	2.93	94.1	86.4	11.2	85	99	113	137	161	208	253	330	361	399	1.0	1.3
264	17	61.7	.038	1	2.10	94.3	87.2	12.0	82	93	105	124	145	195	256	334	365	401	.9	1.4
265	14	62.1	.030	1	2.18	94.3	87.0	11.4	85	99	113	134	156	204	256	339	370	415	.9	1.6
266	6	62.4	.091	0	2.59	94.3	86.5	12.5	79	89	100	119	142	198	261	359	385	410	1.2	1.8
267	3	62.7	.053	-	2.44	94.4	86.4	12.9	82	93	104	124	150	200	254	325	357	404	.9	2.1
268	6	62.3	.025	1	2.10	94.3	86.7	12.6	80	95	106	127	152	203	263	347	375	409	1.1	1.9
269	3	62.9	.005	1	2.21	94.1	88.6	11.2	88	102	118	144	168	202	234	300	337	392	1.1	1.4
270	13	63.7	.024	0	1.54	94.4	86.5	11.9	85	98	110	131	152	200	254	345	378	411	1.1	1.6
271	12	62.2	.060	0	2.57	94.1	86.5	12.1	82	96	107	128	150	199	260	352	385	420	1.1	1.4
272	8	62.9	.059	0	2.67	94.3	87.2	12.0	83	97	109	130	153	201	257	347	382	420	1.0	1.3
273	14	62.2	.025	1	1.87	94.2	86.8	12.4	84	94	106	127	149	198	257	338	371	406	.9	1.6
274	7	61.3	.027	-	2.45	93.9	86.7	11.1	85	101	116	138	162	216	274	348	377	408	1.1	1.2
275	7	63.5	.045	-	2.36	94.1	87.1	11.6	88	100	114	135	157	205	258	339	375	414	1.1	1.4
276	3	62.9	-	-	-	94.0	85.9	12.8	88	96	105	125	148	205	270	352	384	435	1.1	2.6
277	4	63.2	.062	2	2.90	94.2	86.3	12.8	80	90	100	119	145	199	259	351	380	417	.9	2.0
AVERAGE		62.7	.039	1	2.37	94.3	86.9	12.1	84	96	108	129	152	201	256	341	373	410	1.0	1.6
SAMPLES	168																			

District 8 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Lower Mississippi area: Mississippi, Louisiana, eastern and southern Arkansas, and western Tennessee

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86										
						Research, †ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)										Percent
									IBP	Percent evaporated								End point	Resid.	Loss
										5	10	20	30	50	70	90	95			
278	6	63.8	0.012	0	2.97	99.9	92.3	12.8	80	89	101	120	142	203	253	314	341	383	0.8	1.5
279	3	64.8	.045	-	2.95	100.1	93.0	11.8	86	98	109	131	160	208	244	335	376	410	1.0	2.0
280	6	61.2	.021	0	3.00	100.1	92.0	12.7	79	89	101	122	148	208	264	335	358	399	1.0	1.8
281	14	64.6	.028	1	3.19	100.0	92.9	11.8	84	99	112	133	157	206	248	330	362	408	.9	1.6
282	16	63.9	.019	1	2.51	99.9	93.0	12.0	81	94	105	123	144	196	241	304	337	379	.9	1.3
283	16	61.6	.016	3	3.06	99.9	92.2	11.3	85	100	114	138	163	209	250	308	337	379	1.0	1.5
284	3	62.7	.014	-	2.95	100.1	92.1	12.3	80	92	106	127	150	194	244	340	368	404	.8	1.7
285	6	63.9	.018	-	2.93	99.5	92.1	12.2	84	97	109	129	151	198	246	311	339	386	1.0	1.3
286	16	57.5	.006	1	* .00	100.7	90.7	11.5	82	96	108	133	167	228	257	317	342	384	.9	1.4
287	9	65.4	.023	0	2.90	99.9	92.4	12.4	84	91	102	122	144	195	239	314	347	393	.8	1.6
288	4	63.7	.046	1	3.02	100.3	92.5	12.9	80	89	102	126	161	220	253	342	377	421	1.0	2.0
289	3	63.3	-	-	-	100.1	92.2	12.7	87	96	108	134	167	227	266	348	385	435	.8	2.8
290	7	62.6	.049	-	2.74	100.0	92.2	12.0	85	97	112	135	161	211	258	337	372	407	1.2	1.2
291	7	63.5	.014	-	3.01	100.1	92.5	11.7	87	100	114	136	158	205	254	322	353	395	1.0	1.3
292	15	66.4	.014	1	2.91	99.9	92.8	12.5	83	98	109	128	150	199	243	308	340	384	.8	1.4
293	8	65.1	.041	0	2.94	100.0	93.0	11.5	80	93	105	129	156	205	248	328	361	404	.9	1.3
294	12	61.2	.031	1	3.20	100.0	92.5	12.2	82	94	105	128	156	222	268	336	367	411	1.1	1.5
295	13	60.5	.008	1	2.57	100.1	92.5	12.1	84	97	115	132	158	214	258	326	356	397	1.1	1.7
296	3	60.9	.008	2	3.96	99.8	94.0	10.4	88	107	118	136	154	198	238	306	349	409	.9	1.1
AVERAGE		63.0	.023	1	2.99	100.0	92.5	12.0	83	96	108	130	155	208	251	324	356	399	.9	1.6
SAMPLES	167																			

† Research octane numbers above 100 determined by ASTM D1656. * Not included in average for lead.

District 9

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

North Plains area: Minnesota, North Dakota, and South Dakota

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
297	3	61.3	0.092	1	1.35	92.2	83.1	11.9	83	91	103	123	147	200	261	339	368	406	0.9	2.6
298	8	62.5	.078	1	1.51	92.3	84.2	12.0	82	94	107	128	152	203	261	341	368	410	1.1	2.1
299	3	61.2	.094	0	1.85	93.3	84.1	11.8	84	93	106	127	154	209	267	343	370	403	1.0	2.0
300	7	63.6	.036	1	1.73	92.2	84.6	12.1	82	93	105	127	150	200	253	333	365	413	1.0	2.0
301	9	67.0	.020	1	1.56	92.3	85.3	12.4	82	93	106	126	147	190	235	298	316	382	.9	2.3
302	8	62.0	.087	0	1.60	92.5	84.5	11.6	83	95	108	130	153	204	261	339	370	415	.9	1.8
303	4	60.5	.100	2	1.06	93.1	83.9	11.7	82	91	104	128	156	216	278	355	380	418	1.0	2.6
304	7	64.9	.026	1	1.26	92.4	84.9	11.7	81	93	104	123	144	195	251	328	359	397	.9	2.1
305	4	63.9	.092	1	1.65	93.7	86.0	10.9	85	96	109	127	145	186	233	310	339	383	.9	2.2
306	2	63.2	.081	1	1.46	92.7	84.4	10.9	88	99	111	127	143	184	237	312	340	376	1.0	2.0
307	4	60.5	.106	4	.99	92.8	84.1	11.9	85	89	101	124	153	214	276	352	380	414	.9	2.9
308	2	66.6	-	0	1.50	92.1	85.2	12.4	80	91	103	121	141	185	229	286	313	373	1.0	2.0
309	3	64.4	.047	0	1.45	92.1	84.7	10.6	84	95	107	126	143	183	234	297	325	375	.9	2.1
310	2	64.6	-	1	1.44	92.0	84.8	11.4	84	99	109	126	142	179	235	308	334	378	.8	2.2
311	1	63.5	-	1	-	93.5	85.5	11.2	82	92	107	127	150	207	250	330	368	422	1.0	2.5
312	6	63.7	.045	1	1.70	92.2	84.9	11.9	81	91	103	124	146	194	249	333	365	414	1.0	2.1
AVERAGE		63.3	.070	1	1.47	92.6	84.6	11.7	83	93	106	126	148	197	251	325	354	399	1.0	2.2
SAMPLES	73																			

Premium-price gasoline

313	4	67.5	0.069	1	2.44	99.3	93.9	10.8	86	99	115	139	165	202	228	299	340	387	0.9	2.1
314	6	66.2	.024	1	2.44	99.2	92.1	11.7	81	94	107	134	167	213	246	327	360	405	1.0	2.0
315	4	67.4	.077	1	1.53	99.4	91.6	11.6	83	96	113	141	172	213	243	307	339	398	1.1	2.5
316	8	67.1	.054	1	1.93	99.3	92.0	11.1	84	97	112	138	167	211	250	324	352	401	1.0	2.2
317	9	69.7	.015	1	1.58	99.5	92.2	12.5	80	93	104	122	144	190	236	310	346	403	1.1	2.4
318	7	65.9	.017	0	2.33	99.1	92.4	12.0	83	92	105	128	156	206	245	319	355	404	1.0	2.1
319	3	66.3	.065	1	1.99	99.2	91.2	11.2	84	93	110	136	167	210	242	308	348	392	1.0	3.0
320	8	64.0	.005	1	2.71	99.2	92.2	11.1	83	94	109	131	154	203	247	310	325	384	1.1	2.4
321	3	67.5	.059	0	1.76	100.0	92.5	11.8	82	99	115	144	175	213	242	309	343	401	.8	2.2
322	6	65.4	.036	1	2.44	99.1	92.7	12.3	79	92	105	128	157	208	248	318	352	413	1.0	2.3
323	1	66.4	-	0	-	99.5	91.4	11.4	83	91	104	124	148	203	272	323	359	410	1.0	2.5
324	2	69.7	-	0	3.55	99.3	96.9	10.7	84	101	115	138	162	199	225	292	335	390	.8	1.7
325	3	68.7	.034	0	3.17	99.1	95.8	10.8	84	101	115	139	165	202	227	294	339	390	.9	2.1
326	2	70.2	-	0	1.56	99.6	92.6	13.0	79	92	102	121	141	188	231	306	346	394	1.1	1.4
327	4	66.0	.042	1	1.79	99.5	91.6	10.8	83	96	114	142	172	212	242	312	350	402	1.1	1.9
328	2	67.7	.060	1	2.07	99.7	93.9	10.3	88	98	117	143	170	206	232	299	338	392	1.0	3.0
AVERAGE		67.2	.043	1	2.22	99.4	92.8	11.4	83	96	110	134	161	205	241	310	345	398	1.0	2.2
SAMPLES	72																			

District 10

TABLE 3. - Motor gasoline survey, winter 1968-69 --Continued
(Average values of different brands)

Central Plains area: Nebraska, central and western Iowa, northwestern Missouri, and northern Kansas

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Loss
329	5	64.5	0.034	1	2.10	92.1	85.8	11.9	83	96	105	123	145	193	248	336	375	409	0.9	1.6
330	12	66.5	.042	1	1.25	92.0	85.3	13.8	83	93	103	121	142	196	251	327	360	405	.9	2.7
331	9	63.9	.030	0	2.08	92.7	86.4	13.1	85	97	108	129	150	200	257	342	376	417	1.1	2.7
332	9	64.9	.035	1	2.19	93.1	86.8	12.0	85	95	108	129	150	201	253	337	372	418	1.2	1.9
333	3	64.7	-	1	2.14	92.6	86.0	12.4	83	97	106	126	151	201	256	350	392	412	.4	2.1
334	4	63.7	.025	1	1.75	92.1	85.6	12.5	84	94	106	130	154	206	259	337	373	417	1.0	2.5
335	15	63.7	.036	1	2.37	92.5	85.8	12.4	84	97	109	132	155	200	249	324	354	398	1.0	2.8
336	10	63.6	.036	1	2.32	92.1	85.5	11.1	85	98	111	133	154	201	256	340	377	419	1.0	2.1
337	3	64.8	-	1	2.20	93.1	86.0	12.5	83	93	104	123	143	196	253	342	377	406	1.0	1.5
338	5	65.0	.036	0	2.21	92.0	85.7	12.3	84	92	104	124	144	194	250	331	365	405	1.0	1.8
339	1	61.6	.021	1	2.40	90.1	85.2	10.2	70	98	112	140	164	210	258	340	390	410	.9	3.1
340	7	63.7	.037	1	2.36	91.8	85.5	11.3	85	101	115	137	159	206	259	339	374	416	1.0	1.9
AVERAGE		64.2	.033	1	2.11	92.2	85.8	12.1	83	96	108	129	151	200	254	337	374	411	1.0	2.2
SAMPLES	83																			

Premium-price gasoline

341	4	65.6	0.025	1	2.54	98.6	92.3	11.5	83	98	113	136	160	203	242	325	364	408	0.9	1.9
342	3	66.9	-	3	2.52	99.2	92.1	12.1	80	94	102	120	146	200	240	313	360	406	.7	1.3
343	9	66.3	.027	1	2.53	98.9	92.4	12.1	85	95	108	129	154	206	247	331	369	415	1.1	1.7
344	9	65.1	.016	0	2.47	98.8	93.1	12.6	86	100	112	134	158	206	250	328	362	409	.9	2.5
345	12	68.9	.044	1	2.06	99.0	92.3	13.1	84	95	106	126	148	198	244	330	370	418	1.1	2.3
346	5	66.8	.028	1	2.42	98.9	92.6	12.6	81	91	102	121	141	197	240	325	364	413	.7	1.8
347	7	64.7	.021	1	2.94	98.4	91.3	11.1	86	100	113	135	157	204	253	319	352	411	1.0	2.0
348	1	61.5	.018	1	3.10	96.0	89.5	9.3	70	92	106	130	156	212	264	328	364	410	.8	2.7
349	5	66.6	.031	1	2.46	99.1	92.2	12.4	82	92	102	122	140	198	240	325	367	413	.8	2.0
350	3	67.2	-	2	2.29	99.1	91.9	11.9	82	99	107	124	147	199	239	327	378	418	1.0	1.0
351	10	63.8	.032	1	2.79	99.0	91.6	11.1	84	98	111	134	158	212	260	339	375	416	1.0	1.8
352	15	63.1	.026	1	2.55	99.5	92.0	12.0	83	96	108	131	155	206	252	321	351	392	1.0	2.8
AVERAGE		65.5	.027	1	2.56	98.7	91.9	11.8	82	96	108	129	152	203	248	326	365	411	.9	2.0
SAMPLES	83																			

District 11

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

South Plains area: Southern Kansas, southwestern Missouri, western Arkansas, Oklahoma, and northern Texas

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86										Percent	
						Research, ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)										End point	Resid.	Loss
									IBP	Percent evaporated											
										5	10	20	30	50	70	90	95			
353	6	65.1	0.027	1	2.23	92.4	86.2	12.3	84	99	112	132	153	201	259	334	373	411	0.9	1.9
354	16	65.5	.023	1	1.75	92.5	86.1	12.1	84	96	107	125	147	197	254	343	381	420	1.0	2.1
355	4	64.1	.027	1	2.26	93.6	87.8	10.4	88	105	116	135	154	199	257	353	390	437	.9	1.1
356	6	65.4	.026	1	2.44	92.3	86.8	12.3	81	93	103	122	144	193	248	329	360	408	1.0	2.2
357	6	62.9	.032	2	2.07	92.3	86.1	12.5	79	94	108	130	152	197	246	320	353	399	1.0	2.0
358	18	63.8	.031	0	2.65	92.7	86.4	11.8	84	97	109	129	152	200	251	328	366	409	1.0	1.9
359	12	64.0	.016	1	1.87	93.4	86.6	12.4	82	95	106	125	147	197	254	330	364	399	.9	1.7
360	3	66.5	.013	0	2.05	92.6	86.8	13.2	85	92	102	116	132	174	224	310	347	390	1.1	2.4
361	8	64.4	.047	1	2.34	92.1	86.0	12.1	85	100	110	130	154	203	250	321	359	397	1.0	2.7
362	3	66.5	.036	2	3.59	92.7	87.7	11.7	83	99	108	125	140	176	223	317	367	414	1.0	1.0
363	16	63.7	.031	1	2.10	92.8	86.3	12.5	83	95	107	125	144	192	249	337	370	408	1.0	1.7
364	7	65.0	.046	2	2.86	92.4	86.7	12.4	86	101	111	127	147	196	250	341	384	426	1.0	1.5
365	11	63.3	.024	1	2.13	93.2	86.5	12.3	83	97	108	127	149	198	256	330	364	398	1.0	1.5
366	11	63.3	.039	1	2.65	92.6	86.3	10.4	87	106	117	136	154	197	250	342	376	410	1.0	1.3
367	5	61.8	.024	0	1.86	93.8	86.5	12.4	82	97	107	126	146	196	262	334	363	391	.9	1.1
368	7	64.3	.020	1	1.87	92.1	86.4	12.4	84	96	107	127	149	200	250	339	381	416	1.0	2.3
369	4	64.1	.010	1	2.12	91.9	85.9	12.7	84	96	107	128	152	195	244	331	374	414	1.0	1.7
370	3	64.2	.026	3	2.43	93.2	86.3	12.3	85	100	110	131	154	200	256	332	372	412	.8	1.2
371	6	65.4	.018	0	2.20	92.6	86.9	12.7	82	94	101	116	135	182	243	321	352	384	.9	1.9
372	4	65.8	.017	0	1.93	92.6	86.6	12.7	81	92	102	118	137	178	232	313	344	392	.9	1.6
373	3	62.9	.021	0	2.05	94.6	86.8	12.0	86	101	110	130	152	198	251	334	377	405	1.3	1.2
AVERAGE		64.4	.026	1	2.26	92.8	86.6	12.2	84	97	108	127	147	194	248	330	367	407	1.0	1.7
SAMPLES	159																			

District 11 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

South Plains area: Southern Kansas, southwestern Missouri, western Arkansas, Oklahoma, and northern Texas

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number		RVP, ASTM D323, lb	Distillation, ASTM method D86										
						Research, †ASTM D908	Motor, ASTM D357		Temperature range, °F (corrected to sea level)										Percent
									IBP	Percent evaporated								End point	Resid.	Loss
										5	10	20	30	50	70	90	95			
374	16	60.4	0.016	1	2.76	99.2	92.1	12.8	81	95	105	128	157	217	268	335	368	408	1.0	1.5
375	3	65.9	.043	0	3.05	99.9	93.6	11.0	86	103	117	141	166	211	252	344	384	419	1.0	1.5
376	8	67.5	.046	1	2.53	99.2	93.1	12.3	85	96	108	134	162	209	243	323	366	410	.9	2.8
377	3	59.9	.009	0	3.16	99.8	92.2	12.6	81	92	101	128	138	195	262	327	354	418	.9	1.4
378	11	61.5	.014	1	2.81	99.5	92.8	13.3	84	97	110	134	164	219	261	326	363	399	1.1	2.0
379	18	59.4	.015	2	2.79	99.4	92.1	12.5	84	101	114	138	166	219	262	322	352	398	1.1	1.8
380	6	62.1	.030	1	2.32	99.6	92.6	12.2	82	94	105	127	150	208	256	320	352	405	1.0	1.9
381	6	63.9	.022	0	3.00	99.3	93.5	12.4	82	96	109	134	164	218	255	327	358	407	.9	2.4
382	4	60.8	.007	2	3.21	100.1	93.1	11.0	86	100	112	132	158	216	276	332	362	412	.9	1.1
383	16	68.7	.029	1	2.22	99.4	92.9	12.4	86	96	106	123	140	188	242	320	357	405	1.0	2.0
384	6	61.7	.036	1	2.67	99.5	92.0	11.9	85	104	118	139	162	213	265	342	381	417	.9	2.1
385	3	60.0	.011	3	2.94	99.9	93.4	12.1	84	106	124	152	182	224	254	316	338	390	.8	1.2
386	4	62.3	.019	0	2.61	99.8	92.6	12.7	79	88	99	121	150	210	258	328	356	409	1.1	1.6
387	6	67.1	.020	0	2.87	99.2	94.3	13.0	82	93	103	123	149	201	239	316	353	407	1.1	2.0
388	3	61.7	.006	0	3.31	100.1	93.0	12.0	84	102	119	148	176	220	251	309	336	373	1.0	1.5
389	4	65.2	.014	1	2.54	99.7	92.8	15.6	79	92	104	126	154	208	246	322	365	393	1.0	2.2
390	7	68.1	.013	1	2.01	99.2	92.9	12.1	81	96	108	131	158	204	236	306	352	396	1.0	2.4
391	5	65.6	.012	0	2.83	100.2	92.3	11.9	83	100	109	126	145	186	226	282	311	364	.7	1.3
392	11	60.5	.029	0	3.39	99.8	92.3	10.9	85	102	113	134	153	213	273	343	363	400	1.0	1.3
393	11	63.0	.019	1	2.81	99.8	93.6	13.7	81	97	108	132	160	215	253	318	355	388	1.0	2.0
394	8	64.8	.068	0	3.29	99.6	93.1	11.3	86	98	109	131	155	205	253	333	372	418	.9	1.6
AVERAGE		63.3	.023	1	2.82	99.6	92.9	12.4	83	98	110	132	158	209	254	323	357	402	1.0	1.8
SAMPLES	159																			

† Research octane numbers above 100 determined by ASTM D1656.

District 12

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Southern Texas

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
395	3	65.1	0.116	-	2.05	96.4	87.2	12.2	86	108	112	136	164	204	248	340	371	410	1.2	1.3
396	4	65.1	.022	1	2.16	93.5	87.6	11.3	86	103	113	131	149	188	242	326	366	404	1.0	1.6
397	1	61.5	.024	-	2.98	94.9	87.1	10.6	88	110	120	140	163	208	256	354	394	412	1.0	2.0
398	11	61.3	.053	2	2.11	93.8	86.4	11.2	87	101	113	134	155	203	265	348	383	416	1.0	1.6
399	11	62.3	.031	1	3.16	94.1	86.5	10.8	87	104	118	142	168	217	266	339	375	411	1.1	1.5
400	3	61.5	.027	-	3.69	95.1	88.2	11.7	84	100	113	133	153	199	255	355	394	431	.8	1.2
401	1	64.6	.088	2	2.42	97.4	87.1	11.9	80	100	110	132	158	210	258	340	381	410	1.0	1.5
402	8	63.8	.024	3	1.64	94.4	87.5	10.9	88	100	111	129	148	192	251	332	370	417	.9	1.0
403	12	62.4	.029	1	2.64	94.6	88.3	11.0	86	102	114	135	156	205	262	336	371	405	1.0	1.3
404	6	64.0	.084	1	2.61	95.0	87.0	11.2	85	100	113	134	159	206	249	332	381	409	.9	1.2
405	5	63.5	.034	1	1.91	96.0	85.3	10.5	92	105	114	127	140	173	241	346	378	404	1.1	.9
406	4	64.2	.023	2	2.81	93.5	87.5	11.3	86	101	113	131	148	193	255	343	373	404	1.0	1.8
407	11	62.7	.019	3	2.70	94.6	87.6	11.2	86	100	112	132	153	202	256	340	377	416	1.0	1.5
408	10	62.1	.026	1	1.41	94.1	86.5	11.5	86	101	113	133	155	208	268	334	362	395	1.1	1.1
409	1	60.2	.080	1	2.42	96.1	86.0	12.6	82	102	112	132	154	210	272	354	390	418	1.0	1.5
410	8	64.6	.024	1	2.82	93.9	87.9	11.3	89	104	115	133	152	196	256	341	372	409	1.1	1.1
411	3	63.9	.007	-	3.92	91.3	87.1	10.7	88	106	122	144	161	198	242	308	335	371	.6	1.4
412	3	62.6	-	1	3.50	92.5	87.5	9.4	90	109	123	143	159	192	230	300	341	404	1.1	1.1
413	2	64.8	.120	-	2.27	96.2	86.5	12.3	82	97	111	136	161	206	244	320	384	412	1.0	1.5
414	1	64.0	.069	1	2.38	97.0	86.0	12.0	88	101	111	132	159	212	262	350	391	408	1.0	2.0
415	1	64.1	.079	1	2.31	96.7	86.1	12.5	83	100	112	132	160	214	264	346	388	406	1.0	1.5
416	3	63.2	-	2	1.46	92.4	85.0	10.0	87	100	110	126	143	178	242	342	379	405	1.2	.8
AVERAGE		63.3	.049	1	2.52	94.7	86.9	11.3	86	102	114	134	155	201	254	338	375	408	1.0	1.4
SAMPLES	112																			

District 12 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Southern Texas

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, †ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
417	11	59.7	0.023	0	2.89	100.1	92.5	11.8	87	101	114	134	157	218	268	337	381	414	1.0	1.4
418	1	58.5	.017	1	3.26	100.2	92.3	10.8	84	110	126	158	190	232	268	356	396	420	1.0	2.5
419	4	60.0	.011	1	3.10	100.3	92.8	11.6	83	98	110	132	159	224	282	340	364	403	1.2	1.9
420	3	65.2	.080	-	3.16	100.3	91.6	12.1	83	93	103	123	150	198	248	321	351	406	1.1	.9
421	3	62.7	-	1	2.41	100.2	94.3	10.6	98	100	112	132	156	211	262	338	371	412	1.3	1.2
422	2	63.9	.038	1	2.61	100.1	91.3	10.8	83	106	118	141	166	211	254	333	373	411	1.0	1.8
423	1	64.6	.043	1	2.84	100.3	90.8	12.2	80	98	110	133	159	208	254	338	380	414	1.0	2.0
424	3	64.2	.077	-	2.80	100.0	90.6	12.1	82	96	110	132	156	207	253	336	369	407	.8	1.7
425	3	58.5	-	1	4.00	100.4	91.6	10.2	94	108	118	136	157	206	268	327	354	397	.8	1.2
426	4	64.8	.019	-	4.19	99.1	89.7	9.6	95	107	112	121	131	162	225	318	345	386	1.0	1.5
427	8	62.5	.021	1	3.21	100.2	93.4	11.6	86	101	113	135	158	213	268	342	375	410	1.0	1.4
428	1	61.3	.038	1	2.90	99.8	91.3	12.3	80	100	110	133	156	220	274	344	384	398	1.0	2.0
429	8	65.4	.014	0	2.40	100.2	92.4	11.5	87	103	113	133	155	203	247	306	335	391	1.0	1.6
430	14	61.9	.025	1	2.82	99.9	92.9	11.6	85	101	113	135	160	209	257	332	369	408	1.0	1.3
431	4	62.0	.020	1	3.36	100.1	92.9	11.4	83	100	109	128	151	212	281	350	370	405	1.0	1.5
432	5	54.7	.008	1	* .00	101.0	90.9	11.1	87	104	117	150	188	287	272	328	346	379	.9	1.8
433	6	64.1	.065	2	2.70	100.2	92.0	11.6	83	99	111	134	137	205	251	333	370	402	1.2	1.3
434	13	63.0	.024	1	2.70	100.5	92.9	11.3	88	101	114	135	159	206	252	325	359	402	.9	1.3
435	8	63.8	.031	1	2.29	100.1	93.4	10.9	83	98	110	128	148	204	253	325	365	413	1.0	1.4
436	1	65.3	.050	1	2.90	100.2	91.0	11.3	82	102	114	137	160	206	248	335	374	402	1.0	1.5
437	3	59.4	.028	-	3.51	100.2	92.6	11.3	80	95	110	136	164	214	264	343	368	419	.8	2.2
438	11	60.9	.018	2	3.06	100.4	92.2	10.6	87	106	121	147	169	214	256	314	352	393	1.0	1.4
AVERAGE		62.1	.033	1	3.01	100.2	92.1	11.3	85	101	113	135	158	210	259	333	366	404	1.0	1.6
SAMPLES	117																			

† Research octane numbers above 100 determined by ASTM D1656.

* Not included in average for lead.

District 13

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

South Mountain States: Southwestern Kansas, panhandles of Oklahoma and Texas, western Texas, New Mexico, Colorado, Utah, Arizona, Nevada, and eastern California

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Loss
439	3	67.1	0.011	0	2.18	92.2	85.6	10.9	87	100	110	124	140	177	225	330	375	414	0.9	1.6
440	11	61.5	.055	0	2.08	91.7	85.5	11.8	84	97	111	132	156	207	263	346	382	421	1.0	1.9
441	36	61.4	.054	1	2.31	92.7	85.0	10.5	86	100	115	136	158	204	260	340	373	416	.9	1.7
442	3	61.1	.050	0	2.19	91.8	84.0	11.5	86	97	114	140	162	202	239	288	308	362	.5	2.5
443	12	61.4	.076	1	2.53	93.7	86.1	11.2	84	96	112	136	159	209	262	339	375	418	.8	2.3
444	3	57.7	.065	1	2.69	91.9	82.4	10.9	89	102	124	156	184	230	269	330	355	392	.8	3.2
445	21	63.1	.061	2	2.52	92.8	86.1	11.1	86	100	113	133	154	199	254	336	371	414	.9	1.7
446	3	58.2	.093	0	2.05	93.2	84.6	12.1	82	93	110	138	165	215	264	332	360	402	1.0	2.5
447	5	61.2	-	-	1.52	91.8	83.6	10.6	86	102	116	140	164	213	272	351	384	418	1.1	2.0
448	9	60.9	.135	1	2.74	93.8	86.1	10.6	87	102	118	140	163	212	267	347	380	423	1.1	1.8
449	26	62.0	.048	1	2.24	92.9	85.7	11.4	84	98	112	133	156	202	257	341	376	421	1.0	2.1
450	14	66.5	.020	1	2.20	91.8	85.4	10.8	86	99	111	127	144	184	237	332	371	415	1.0	1.4
451	11	64.0	.027	1	1.90	91.5	85.8	10.9	83	99	112	134	155	198	246	324	354	407	.9	2.0
452	4	61.6	-	-	1.70	90.7	85.0	11.8	85	91	109	135	160	215	272	348	383	424	1.2	1.8
453	15	64.3	.031	0	2.09	92.3	85.3	11.1	86	100	113	134	156	202	255	344	380	420	1.0	1.6
454	24	65.4	.057	1	2.04	92.2	85.8	10.8	86	100	114	135	155	199	250	334	370	420	.9	1.7
455	32	63.9	.033	1	2.33	92.5	86.1	10.7	87	103	116	135	156	198	251	337	373	411	1.0	1.3
456	17	62.0	.050	1	2.28	93.0	85.6	10.9	87	100	112	132	153	200	257	332	361	409	.9	1.7
457	31	62.9	.049	0	2.43	92.6	85.7	11.4	86	98	110	130	151	196	249	335	371	413	1.0	2.0
458	4	60.3	-	-	2.05	90.1	84.4	11.4	84	99	113	138	162	213	268	346	375	413	1.0	1.7
459	7	64.6	.051	1	2.29	92.1	85.4	10.6	89	103	112	126	141	179	234	336	373	411	1.0	1.5
460	3	63.6	.021	0	2.71	91.3	87.7	10.7	85	98	114	140	168	203	230	276	305	394	.5	2.5
461	2	58.1	.094	0	2.50	91.3	84.8	10.3	85	100	120	149	178	230	277	333	354	400	.7	1.3
462	1	58.7	.100	3	2.04	93.7	85.0	11.0	88	101	112	136	161	214	277	354	390	431	1.0	3.0
AVERAGE		62.1	.056	1	2.23	92.2	85.3	11.0	86	99	113	136	158	204	256	334	367	411	.9	2.0
SAMPLES	297																			

District 13 (Cont.)

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

South Mountain States: Southwestern Kansas, panhandles of Oklahoma and Texas, western Texas, New Mexico, Colorado, Utah, Arizona, Nevada, and eastern California

Premium-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
463	4	59.2	-	-	2.89	96.9	89.3	12.2	83	95	113	139	164	215	267	337	360	409	1.2	2.5
464	31	64.6	0.033	1	2.61	99.0	92.1	11.6	85	98	112	134	160	212	254	324	361	405	1.0	1.8
465	18	64.0	.029	1	2.78	99.5	92.7	10.9	87	101	115	137	161	208	250	319	353	398	.8	1.6
466	30	64.2	.014	1	2.72	99.3	92.8	11.0	86	99	113	136	161	210	252	318	355	403	1.0	1.7
467	24	66.5	.035	1	2.41	99.0	93.0	11.1	86	99	113	134	156	208	256	326	366	417	1.0	1.8
468	14	64.4	.032	1	2.59	98.2	91.2	11.4	84	96	112	137	163	213	258	331	369	414	.9	1.9
469	4	62.4	-	-	2.48	96.8	89.6	11.8	84	94	107	133	161	212	265	342	378	429	1.1	2.4
470	11	63.5	.017	1	2.07	97.3	90.2	11.2	83	97	110	131	153	203	252	312	334	388	1.0	2.2
471	14	66.9	.008	1	2.26	99.4	93.4	11.3	85	98	113	137	165	211	247	313	346	406	1.0	2.0
472	26	65.4	.022	1	2.73	99.4	91.6	11.4	86	98	112	134	157	207	253	323	357	404	.9	2.1
473	10	59.0	.054	2	3.20	100.0	91.7	10.3	87	102	118	141	164	213	260	323	350	403	1.0	2.2
474	4	61.1	-	-	2.57	97.1	89.7	9.7	85	103	123	153	182	237	287	352	380	420	1.2	1.8
475	3	54.7	.014	0	3.88	99.7	92.2	10.8	85	93	110	142	170	217	261	320	343	393	1.0	3.0
476	21	63.2	.027	3	2.90	99.8	92.5	10.7	87	101	115	138	162	212	257	326	358	412	.9	1.7
477	3	52.9	.048	0	3.01	100.1	92.1	12.0	86	94	118	152	178	221	262	318	340	390	.8	3.0
478	12	60.8	.032	0	2.29	99.3	90.9	10.8	85	101	115	137	160	211	256	316	344	395	1.0	2.0
479	3	52.4	.028	0	3.13	99.9	91.4	12.2	81	93	111	138	162	211	260	313	334	378	.8	2.5
480	36	62.2	.020	0	2.73	98.8	91.8	10.3	87	101	117	141	166	212	256	324	357	406	1.0	1.9
481	11	64.4	.029	1	2.45	97.9	91.0	11.4	84	96	110	133	159	212	260	336	373	420	.9	1.9
482	3	67.9	.007	2	2.37	99.9	94.3	12.2	86	93	106	131	163	209	235	290	336	392	1.0	1.8
483	1	61.1	.070	0	2.94	99.2	90.8	10.8	85	100	112	136	161	212	258	333	366	399	1.0	2.0
484	2	58.5	.038	0	2.91	100.1	91.3	11.5	86	97	114	139	162	208	254	324	352	403	.8	2.2
485	3	55.1	.040	0	3.50	100.1	93.4	11.4	86	93	111	143	175	228	276	337	360	402	.7	3.3
486	7	66.3	.023	0	3.03	100.0	94.3	11.7	84	98	108	128	155	206	252	320	360	409	1.0	1.3
AVERAGE		61.7	.030	1	2.77	99.0	91.8	11.2	85	98	113	138	163	213	258	324	356	404	1.0	2.1
SAMPLES	295																			

District 14

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

North Mountain States: Wyoming, Montana, Idaho, eastern Washington, and eastern Oregon

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
487	13	62.3	0.059	3	1.89	92.6	85.7	12.0	83	95	109	132	154	205	258	336	367	417	0.9	2.0
488	12	62.8	.061	1	2.12	92.4	85.1	12.4	79	91	104	126	151	199	249	334	374	418	1.1	2.5
489	4	62.6	.040	3	1.93	93.7	85.4	12.4	76	96	110	132	153	199	251	335	376	415	.8	2.9
490	6	62.5	.064	1	1.95	93.3	85.8	12.0	81	93	106	128	153	205	257	338	375	422	1.1	1.7
491	15	63.3	.094	-	2.02	92.7	84.9	12.6	84	93	106	127	151	202	259	343	378	426	1.2	2.7
492	4	61.2	.120	1	2.05	94.4	83.7	12.7	85	94	107	131	155	209	266	347	379	428	.9	3.7
493	6	62.9	.061	0	2.09	92.6	85.6	12.5	80	89	100	121	145	194	245	320	352	401	.9	2.4
494	4	62.7	.061	4	2.22	93.2	86.0	12.4	84	93	103	124	149	201	259	338	377	428	.9	2.7
495	12	62.6	.121	2	2.12	92.7	84.2	12.6	82	94	108	130	155	204	257	339	376	417	1.2	2.4
496	8	63.2	.048	1	2.10	92.9	85.4	12.6	84	93	106	127	151	200	250	333	367	413	1.2	2.2
497	7	62.3	.060	2	1.99	92.1	85.6	12.5	84	93	104	127	152	206	258	333	364	428	1.0	2.9
498	13	61.5	.094	2	2.00	92.5	83.5	11.6	85	101	116	140	164	215	269	342	373	414	1.0	2.1
AVERAGE		62.5	.074	2	2.04	92.9	85.1	12.4	82	94	107	129	153	203	257	337	372	419	1.0	2.5
SAMPLES	104																			

Premium-price gasoline

499	4	66.8	0.045	2	3.17	100.4	91.3	12.3	84	95	108	136	163	205	232	285	320	379	0.9	3.2
500	15	62.6	.028	2	2.50	98.8	91.0	12.5	86	97	110	137	167	222	266	331	360	408	1.4	3.1
501	6	65.9	.017	0	2.00	99.4	92.2	13.2	82	89	103	128	162	205	237	321	363	418	.9	2.7
502	4	66.6	.030	3	2.69	100.3	91.9	12.3	77	98	113	137	162	209	252	327	362	413	1.0	2.9
503	12	64.3	.034	1	2.59	98.9	90.7	13.0	85	92	105	128	155	208	247	310	341	392	1.2	2.7
504	13	63.8	.010	2	2.17	98.3	91.4	12.5	82	95	109	132	158	208	252	326	358	409	1.1	2.4
505	13	64.6	.045	0	2.85	98.8	89.9	11.8	84	97	113	135	159	206	250	315	344	403	1.1	2.3
506	7	63.3	.010	3	2.15	98.5	92.0	12.2	79	89	102	129	157	209	247	314	344	399	.9	2.6
507	8	62.9	.050	2	2.17	99.1	92.3	13.1	85	92	103	127	157	213	260	328	360	410	1.9	2.2
508	12	64.9	.044	1	2.85	99.0	90.2	12.8	81	92	106	131	157	208	249	304	321	387	1.5	2.3
509	4	65.9	.023	1	2.36	100.0	93.3	13.0	82	91	102	124	149	203	236	304	341	393	.9	2.7
510	6	64.4	.032	0	2.29	99.0	92.2	13.5	81	88	102	126	156	207	245	309	342	407	.9	2.7
AVERAGE		64.7	.031	1	2.48	99.2	91.5	12.7	82	93	106	131	159	209	248	315	346	402	1.1	2.7
SAMPLES	104																			

District 15

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Pacific Northwest: Western Washington and western Oregon

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Percent: Loss
511	3	63.3	0.019	0	1.64	91.1	85.6	9.7	92	101	110	125	141	187	280	364	391	436	0.6	2.2
512	7	63.1	.031	0	1.80	93.3	85.9	11.6	88	100	113	137	161	209	260	342	374	412	.8	2.7
513	8	63.8	.034	0	1.79	93.4	85.9	11.9	82	94	107	127	148	194	245	329	366	410	.9	2.4
514	8	64.5	.036	1	1.67	93.5	85.8	12.5	84	95	108	128	150	198	253	340	378	418	1.0	2.6
515	8	62.7	.012	1	1.68	92.8	86.5	11.7	84	96	109	130	154	204	261	339	371	418	1.0	2.0
516	7	64.8	.017	1	2.54	93.3	86.7	12.4	83	91	100	121	144	193	241	318	346	387	.8	2.7
517	8	62.2	.032	1	1.81	94.0	85.9	12.1	82	94	107	128	150	198	253	343	381	421	1.1	2.5
518	1	62.7	.010	1	1.76	92.6	85.8	11.3	80	93	103	121	142	190	248	329	358	394	1.0	2.0
519	1	62.7	.019	0	1.43	91.5	85.2	11.2	87	98	109	126	143	186	238	308	334	414	.5	2.0
520	8	62.7	.057	1	2.32	94.3	85.9	12.2	84	96	109	130	152	201	254	338	372	416	1.0	2.3
521	8	64.9	.019	1	2.44	93.4	86.8	12.1	84	96	109	130	151	197	252	334	364	405	1.0	2.3
AVERAGE		63.4	.026	1	1.90	93.0	86.0	11.7	85	96	108	128	149	196	253	335	367	412	.9	2.3
SAMPLES	67																			

Premium-price gasoline

522	7	62.1	0.016	1	2.74	100.0	92.0	11.9	86	93	107	132	162	214	254	309	332	387	0.8	3.0
523	8	63.1	.010	1	2.19	99.4	92.1	11.9	82	93	108	131	156	204	250	318	345	397	.8	3.0
524	8	63.4	.014	1	1.66	99.8	90.8	12.4	83	94	109	135	164	213	253	316	349	396	.9	2.9
525	8	63.2	.012	1	2.20	99.7	91.7	12.0	85	97	112	134	159	206	250	318	351	403	.8	3.2
526	7	63.0	.016	1	1.97	99.7	91.4	11.2	87	98	112	137	166	214	248	306	334	392	.9	2.6
527	3	64.2	.017	0	2.30	99.9	91.9	12.8	83	90	104	129	156	204	238	300	334	396	.5	3.0
528	8	62.3	.010	1	2.49	99.8	91.5	12.2	83	93	108	133	160	213	260	320	345	400	.9	2.9
529	8	63.2	.031	1	2.38	99.6	91.1	12.8	83	94	108	131	156	206	252	316	348	394	.8	2.9
530	1	64.1	.011	0	2.25	99.9	91.6	12.7	81	88	102	126	152	204	241	302	328	386	.7	2.8
531	1	62.5	.010	4	2.19	99.3	91.7	11.3	84	92	103	123	146	193	239	310	336	373	1.0	3.0
532	8	61.0	.023	0	1.86	100.0	91.2	12.6	85	95	109	133	161	212	256	319	349	395	.7	2.7
AVERAGE		62.9	.015	1	2.20	99.7	91.5	12.2	84	93	107	131	158	208	249	312	341	393	.8	2.9
SAMPLES	67																			

District 16

TABLE 3. - Motor gasoline survey, winter 1968-69--Continued
(Average values of different brands)

Northern California

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): Percent evaporated: IBP	5	10	20	30	50	70	90	95	End point	Percent: Resid.	Loss
533	3	62.5	0.048	0	1.85	93.9	85.5	13.2	79	87	100	122	145	202	263	345	372	408	1.0	2.8
534	6	59.8	.035	1	2.38	94.3	86.8	11.4	83	97	112	137	161	212	268	342	374	420	1.0	2.6
535	7	63.1	.020	2	1.32	94.2	85.8	11.9	86	99	111	136	156	202	253	330	365	409	1.1	2.7
536	3	66.9	.006	0	2.11	91.2	87.3	12.7	84	91	104	125	150	199	246	320	350	406	.7	2.5
537	6	58.9	.077	1	1.64	94.9	84.5	10.9	85	101	115	138	161	208	257	324	351	389	.9	2.3
538	7	63.4	.038	2	2.33	93.9	86.4	11.4	89	99	113	134	156	204	258	345	377	419	1.1	2.7
539	7	63.2	.044	2	2.21	93.6	86.1	11.1	88	100	115	135	156	201	252	336	372	418	1.1	2.4
540	8	60.4	.046	1	2.38	94.3	85.6	10.4	89	103	117	138	159	209	274	345	378	415	1.0	2.4
541	2	67.6	.012	0	2.19	90.9	85.8	10.8	84	99	115	136	159	207	267	345	378	419	.9	2.4
542	6	65.1	.015	0	2.97	94.1	88.1	11.2	88	102	114	133	154	198	246	329	358	407	1.0	2.0
543	7	61.1	.066	1	2.36	94.4	85.8	11.4	90	104	118	139	161	208	259	338	371	414	.9	2.6
544	2	58.7	.032	0	1.22	91.5	84.5	12.5	83	88	101	122	145	195	244	316	349	422	.5	3.3
545	1	66.5	.010	1	2.27	91.8	86.6	11.4	86	100	110	130	148	191	236	284	304	335	1.0	3.0
AVERAGE		62.9	.035	1	2.09	93.3	86.1	11.6	86	98	111	133	155	203	256	331	361	406	.9	2.6
SAMPLES	65																			

Premium-price gasoline

546	7	60.8	0.075	2	2.53	100.0	90.9	11.2	87	99	112	132	154	201	257	335	370	421	1.1	2.4
547	7	61.7	.086	2	2.59	99.8	91.0	11.5	87	99	112	133	153	199	251	336	373	416	1.1	2.0
548	6	58.4	.084	2	2.31	100.0	91.1	10.4	87	102	118	146	173	220	271	333	363	407	1.1	2.3
549	3	60.2	.003	0	3.36	100.1	94.1	12.7	82	90	104	126	147	195	243	295	313	376	.7	2.3
550	7	58.1	.031	1	2.33	100.0	91.4	11.5	84	97	112	138	167	217	268	339	367	413	1.1	2.9
551	7	60.8	.138	1	3.45	99.9	91.8	11.3	87	100	114	138	161	210	261	335	368	418	1.1	3.1
552	3	57.9	.011	0	2.50	100.1	92.1	12.2	87	92	106	131	160	221	267	316	334	398	.7	3.3
553	1	60.5	.010	2	3.36	99.7	94.2	11.4	78	92	100	122	147	193	249	300	330	369	1.0	2.0
554	2	60.8	.033	0	3.44	99.7	91.8	12.0	83	95	110	134	159	207	251	318	345	420	.8	2.2
555	7	59.5	.078	1	2.54	99.9	91.5	11.7	87	101	116	139	167	218	269	341	367	408	1.0	2.7
556	5	60.3	.065	1	3.15	100.1	93.0	12.5	86	98	111	132	153	201	251	315	348	396	1.1	2.2
557	2	60.7	.003	0	3.60	100.2	93.4	11.9	84	96	112	133	154	202	253	321	350	398	.9	2.3
558	7	61.3	.058	0	2.58	99.6	91.4	11.4	84	101	115	138	161	209	258	327	362	402	1.1	2.2
AVERAGE		60.1	.052	1	2.90	99.9	92.1	11.7	85	97	111	134	158	207	258	324	353	403	1.0	2.5
SAMPLES	64																			

District 17

TABLE 3. - Motor gasoline survey, winter 1968-69 --Continued
(Average values of different brands)

Southern California

Regular-price gasoline

Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Loss
559	6	58.0	0.034	2	1.34	94.1	85.2	12.8	86	98	111	133	154	199	255	333	360	395	1.2	2.1
560	4	57.8	.053	2	1.11	93.8	85.4	11.4	89	104	116	134	152	202	272	358	395	428	1.2	1.8
561	5	57.5	.042	1	.97	93.4	85.5	10.6	88	102	112	130	149	202	285	363	392	430	1.2	1.4
562	6	63.0	.077	2	1.80	93.9	85.1	11.8	86	100	112	127	144	184	238	323	360	403	1.2	1.8
563	3	59.3	.095	-	1.49	94.2	85.4	11.1	87	100	110	129	150	189	229	289	316	366	.7	2.1
564	6	59.4	.092	3	2.09	94.3	85.2	11.0	92	106	117	136	157	203	260	345	376	409	1.1	1.7
565	5	59.6	.131	3	2.81	94.8	85.9	11.7	85	96	108	130	156	206	258	331	357	388	1.1	1.9
566	3	63.6	.035	-	2.14	91.1	86.0	11.6	86	97	117	130	153	205	258	326	360	423	.8	2.2
567	4	60.1	.020	1	1.77	93.5	86.0	11.9	88	103	115	133	155	196	261	359	395	421	1.4	2.0
568	6	59.0	.044	2	1.61	94.1	85.1	10.9	89	101	112	131	155	202	253	332	363	395	1.3	2.2
569	3	60.8	.110	-	2.42	94.0	85.7	11.0	89	101	117	143	172	227	278	340	367	417	.9	2.2
AVERAGE		59.8	.067	2	1.78	93.7	85.5	11.4	88	101	113	132	154	201	259	336	367	407	1.1	1.9
SAMPLES	51																			

Premium-price gasoline

570	3	58.7	0.045	2	2.69	100.3	91.4	10.9	85	99	111	135	159	210	258	328	355	417	0.9	1.7
571	3	55.3	.048	-	3.02	100.3	92.0	9.3	92	114	136	169	199	239	278	328	348	406	.7	1.3
572	6	61.3	.190	2	2.53	100.0	91.2	11.9	90	103	113	128	145	191	245	322	360	413	1.3	1.7
573	5	57.8	.085	1	1.82	100.1	91.2	10.9	84	97	110	131	154	206	257	319	349	409	1.1	1.7
574	4	57.5	.189	1	1.70	100.2	91.0	10.8	85	102	115	137	165	215	259	325	356	409	1.1	1.5
575	7	59.3	.066	2	3.17	99.5	91.9	10.6	90	103	117	138	162	211	258	331	363	422	1.2	1.9
576	2	58.9	.032	-	2.51	100.1	91.8	10.7	85	104	118	141	168	218	262	330	369	414	.9	1.1
577	6	59.5	.106	2	2.56	100.1	90.8	12.2	87	100	111	133	157	212	258	323	357	397	1.4	2.0
578	5	58.5	.146	1	2.41	100.0	91.1	12.4	85	98	108	128	151	205	257	317	339	377	1.1	1.7
579	3	56.7	.069	-	2.20	100.3	91.0	10.8	90	101	114	140	170	218	260	316	341	425	.7	1.3
580	5	60.0	.144	2	2.76	100.1	91.5	12.0	90	102	113	135	161	214	260	323	350	399	1.1	1.9
581	6	58.8	.195	2	2.87	100.1	91.3	10.9	90	103	116	139	163	211	259	334	369	412	1.1	1.8
AVERAGE		58.5	.110	2	2.52	100.1	91.4	11.1	88	102	115	138	163	213	259	325	355	408	1.1	1.6
SAMPLES	55																			

TABLE 4. - Motor gasoline survey, winter 1968-69
(Average values for brands from different districts)

Regular-price gasoline

District No.	Name	Items (brands)	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Loss
1	NORTHEAST AREA	15	56	62.7	0.043	1	1.93	94.8	86.9	12.8	79	90	105	126	148	200	264	342	372	410	1.0	2.8
2	MID ATL COAST REGION	18	290	62.9	.043	2	1.95	94.8	86.6	12.8	81	94	106	127	149	200	263	345	375	413	.9	2.2
3	SOUTHEAST AREA	19	184	62.4	.028	2	2.10	94.4	86.8	11.5	84	99	112	133	155	203	260	340	373	413	.9	1.6
4	APPALACHIAN AREA	20	161	62.7	.023	1	2.09	94.7	87.2	12.9	81	93	106	127	150	203	261	337	367	410	.9	2.3
5	MICHIGAN	20	91	63.4	.041	1	2.45	94.7	86.8	13.0	79	91	105	126	149	199	256	336	369	412	.8	2.5
6	NORTH ILLINOIS AREA	17	117	63.5	.039	1	2.43	94.7	87.0	12.5	82	92	103	123	145	196	253	330	362	405	1.0	2.1
7	CENTRAL MISS AREA	20	100	63.6	.043	2	2.52	94.5	87.3	12.6	80	95	107	128	150	201	259	338	370	410	.9	1.9
8	LOWER MISS AREA	19	168	62.7	.039	1	2.37	94.3	86.9	12.1	84	96	108	129	152	201	256	341	373	410	1.0	1.6
9	NORTH PLAINS AREA	16	73	63.3	.070	1	1.47	92.6	84.6	11.7	83	93	106	126	148	197	251	325	354	399	1.0	2.2
10	CENTRAL PLAINS AREA	12	83	64.2	.033	1	2.11	92.2	85.8	12.1	83	96	108	129	151	200	254	337	374	411	1.0	2.2
11	SOUTH PLAINS AREA	21	159	64.4	.026	1	2.26	92.8	86.6	12.2	84	97	108	127	147	194	248	330	367	407	1.0	1.7
12	SOUTHERN TEXAS	22	112	63.3	.049	1	2.52	94.7	86.9	11.3	86	102	114	134	155	201	254	338	375	408	1.0	1.4
13	SOUTH MOUNTAIN STATES	24	297	62.1	.056	1	2.23	92.2	85.3	11.0	86	99	113	136	158	204	256	334	367	411	.9	2.0
14	NORTH MOUNTAIN STATES	12	104	62.5	.074	2	2.04	92.9	85.1	12.4	82	94	107	129	153	203	257	337	372	419	1.0	2.5
15	PACIFIC NORTHWEST	11	67	63.4	.026	1	1.90	93.0	86.0	11.7	85	96	108	128	149	196	253	335	367	412	.9	2.3
16	NORTHERN CALIFORNIA	13	65	62.9	.035	1	2.09	93.3	86.1	11.6	86	98	111	133	155	203	256	331	361	406	.9	2.6
17	SOUTHERN CALIFORNIA	11	51	59.8	.067	2	1.78	93.7	85.5	11.4	88	101	113	132	154	201	259	336	367	407	1.1	1.9
AVERAGE				62.9	.043	1	2.13	93.8	86.3	12.1	83	96	108	129	151	200	256	336	369	410	1.0	2.1
SAMPLES			2,178																			

Premium-price gasoline

1	NORTHEAST AREA	15	55	62.4	0.018	1	2.54	100.4	91.7	12.9	79	90	105	127	151	209	258	323	353	400	0.9	2.6
2	MID ATL COAST REGION	18	289	62.6	.026	2	2.50	100.5	91.8	13.1	80	92	106	127	152	209	256	322	352	401	.9	2.1
3	SOUTHEAST AREA	19	185	62.5	.016	1	2.83	100.3	92.3	11.6	84	98	112	134	158	209	257	324	357	399	.9	1.5
4	APPALACHIAN AREA	20	159	63.8	.015	1	2.70	100.2	92.8	13.1	79	92	105	127	152	205	251	319	350	400	.9	2.4
5	MICHIGAN	20	93	64.8	.024	0	2.76	99.9	92.8	13.0	81	93	108	132	159	210	250	322	358	407	.7	2.5
6	NORTH ILLINOIS AREA	17	121	64.0	.015	1	2.80	99.6	93.0	12.5	82	92	105	126	152	205	248	318	350	400	.9	2.3
7	CENTRAL MISS AREA	20	100	63.5	.026	1	3.07	100.0	92.9	13.0	80	93	108	131	158	210	254	323	355	398	.8	2.2
8	LOWER MISS AREA	19	167	63.0	.023	1	2.99	100.0	92.5	12.0	83	96	108	130	155	208	251	324	356	399	.9	1.6
9	NORTH PLAINS AREA	16	72	67.2	.043	1	2.22	99.4	92.8	11.4	83	96	110	134	161	205	241	310	345	398	1.0	2.2
10	CENTRAL PLAINS AREA	12	83	65.5	.027	1	2.56	98.7	91.9	11.8	82	96	108	129	152	203	248	326	365	411	.9	2.0
11	SOUTH PLAINS AREA	21	159	63.3	.023	1	2.82	99.6	92.9	12.4	83	98	110	132	158	209	254	323	357	402	1.0	1.8
12	SOUTHERN TEXAS	22	117	62.1	.033	1	3.01	100.2	92.1	11.3	85	101	113	135	158	210	259	333	366	404	1.0	1.6
13	SOUTH MOUNTAIN STATES	24	295	61.7	.030	1	2.77	99.0	91.8	11.2	85	98	113	138	163	213	258	324	356	404	1.0	2.1
14	NORTH MOUNTAIN STATES	12	104	64.7	.031	1	2.48	99.2	91.5	12.7	82	93	106	131	159	209	248	315	346	402	1.1	2.7
15	PACIFIC NORTHWEST	11	67	62.9	.015	1	2.20	99.7	91.5	12.2	84	93	107	131	158	208	249	312	341	393	.8	2.9
16	NORTHERN CALIFORNIA	13	64	60.1	.052	1	2.90	99.9	92.1	11.7	85	97	111	134	158	207	258	324	353	403	1.0	2.5
17	SOUTHERN CALIFORNIA	12	55	58.5	.110	2	2.52	100.1	91.4	11.1	88	102	115	138	163	213	259	325	355	408	1.1	1.6
AVERAGE				63.1	.031	1	2.69	99.8	92.2	12.2	83	95	109	132	157	208	253	322	354	402	.9	2.2
SAMPLES			2,185																			

TABLE 5. - Motor gasoline survey, winter 1968-69
Data for some additional grades

District	Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100ml	Lead, ASTM D526, g/gal	Octane number: Research, ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): IBP	Percent evaporated: 5	10	20	30	50	70	90	95	End point	Percent: Resid.	Loss
										Third grade gasoline											
1	582	3	60.8	0.034	2	0.91	93.3	85.2	12.9	78	88	104	126	151	214	282	344	368	413	0.9	2.7
2	583	13	62.1	.028	1	1.12	93.0	85.3	13.6	80	91	105	125	148	208	282	355	385	413	1.1	1.7
3	584	7	61.9	.048	1	1.54	92.4	85.0	11.1	86	100	113	133	155	206	268	341	358	406	.8	1.2
3	585	7	60.3	.036	1	1.62	91.4	85.6	11.1	86	101	114	135	158	216	289	363	393	428	.9	1.6
4	586	9	61.8	.029	1	.94	93.2	85.4	12.3	81	94	106	125	147	203	271	341	369	415	.9	2.1
5	587	4	62.3	.030	1	1.02	92.9	85.6	13.6	84	96	106	127	152	203	260	334	366	408	.8	1.7
6	588	4	63.6	.038	2	2.35	94.1	85.9	11.8	84	88	103	121	142	189	248	325	357	406	.9	2.2
7	589	8	61.8	.037	1	1.49	92.8	85.8	12.7	81	93	105	125	146	196	260	345	378	404	1.0	1.6
8	590	9	60.7	.051	2	1.33	92.2	85.2	11.0	84	98	108	128	150	202	266	343	376	432	1.1	1.4
11	591	6	62.4	-	0	1.69	91.6	85.0	11.2	83	102	112	130	152	207	271	350	385	400	1.2	.8
12	592	10	62.3	.019	0	2.53	92.8	87.2	10.5	91	109	123	146	168	209	257	338	371	408	1.1	1.3
13	593	3	61.2	.045	1	1.44	92.3	85.1	10.3	89	101	111	130	151	202	263	333	360	412	.9	1.5
17	594	2	59.6	.064	2	1.34	91.4	84.7	11.2	86	102	113	135	159	207	260	334	369	414	1.1	1.9
AVERAGE			61.6	.038	1	1.49	92.6	85.5	11.8	84	97	109	130	152	205	267	342	372	412	1.0	1.7
SAMPLES		85																			

TABLE 5. - Motor gasoline survey, winter 1968-69--Continued
Data for some additional grades

District	Item	Samples	Gravity, ASTM D287, °API	Sulfur, ASTM D1266, wt pct	Gum, ASTM D381, mg/100 ml	Lead, ASTM D526, g/gal	Octane number: Research, † ASTM D908	Octane number: Motor, ASTM D357	RVP, ASTM D323, lb	Distillation, ASTM method D86: Temperature range, °F (corrected to sea level): Percent evaporated: IBP	5	10	20	30	50	70	90	95	End point	Percent: Resid.	Loss
Intermediate grade gasoline																					
1	595	3	63.2	0.030	0	1.47	96.4	87.4	14.6	72	75	90	108	127	184	246	341	374	400	1.0	4.0
2	596	15	63.2	.034	2	1.41	96.8	87.3	14.0	79	88	100	117	139	195	260	332	358	392	.9	3.4
3	597	3	62.5	-	2	1.94	97.0	88.9	12.3	85	92	107	129	156	210	266	332	362	397	1.0	2.0
3	598	4	62.4	.018	1	1.54	96.8	87.4	13.0	81	96	109	131	155	210	261	329	357	393	.7	1.8
4	599	5	63.1	.041	1	1.96	96.5	87.8	11.5	82	95	106	124	140	180	258	350	380	414	.9	1.1
7	600	3	63.1	-	-	1.41	96.7	87.5	14.8	80	93	106	126	152	206	263	320	342	398	.6	2.4
8	601	15	62.4	.027	3	2.21	96.8	88.6	11.9	81	94	106	125	148	200	257	330	357	399	.8	1.6
11	602	4	64.8	-	0	1.98	96.8	90.0	12.3	84	96	104	122	142	190	248	323	355	390	.8	1.2
12	603	1	65.3	.023	1	3.13	95.9	89.0	12.0	78	97	104	119	137	184	250	344	367	386	1.0	1.5
12	604	10	63.4	.021	0	1.84	96.5	88.7	11.1	86	103	115	135	156	208	260	324	351	384	1.0	1.0
12	605	1	64.1	.070	1	2.56	97.4	86.5	12.1	83	100	110	131	164	212	264	350	388	414	1.0	1.5
13	606	4	66.7	-	-	2.38	94.3	87.8	10.8	86	99	111	129	147	191	240	328	365	411	1.1	1.5
15	607	3	62.8	.018	0	1.90	95.2	88.2	11.4	84	94	106	127	151	199	251	328	356	406	.8	2.2
17	608	3	57.6	.045	-	1.36	96.2	87.4	9.5	89	101	113	130	148	198	272	352	383	441	.7	1.3
AVERAGE			63.2	.033	1	1.94	96.4	88.0	12.2	82	95	106	125	147	198	257	335	364	402	.9	1.9
SAMPLES		74																			
Super-premium gasoline																					
1	609	1	61.6	0.007	1	2.46	102.6	93.9	12.9	74	78	96	118	145	208	252	306	336	380	1.0	4.0
2	610	3	62.6	.013	2	2.43	102.6	93.9	13.2	81	87	104	129	157	217	254	305	348	385	1.0	3.5
3	611	1	57.9	.007	0	2.84	102.7	94.7	10.4	87	99	114	142	168	220	251	314	361	394	1.0	2.0
4	612	2	60.8	.008	2	2.18	102.0	94.6	13.1	78	87	103	126	160	222	254	301	324	374	.8	3.8
5	613	1	62.3	.020	0	2.37	101.7	95.2	15.6	76	77	95	120	157	223	255	305	324	377	.2	4.8
6	614	1	58.7	.001	4	2.36	102.4	94.2	12.5	75	89	104	133	168	221	249	296	345	365	1.0	3.0
13	615	1	64.5	.060	1	2.62	102.3	93.1	6.9	101	128	137	155	172	209	236	290	336	390	1.0	2.0
14	616	1	68.5	.010	2	2.50	100.7	95.3	7.1	95	112	132	155	176	209	230	287	327	382	1.0	1.0
15	617	1	60.8	.010	2	2.70	101.5	94.7	7.4	90	109	120	135	155	204	250	316	338	399	1.0	1.0
16	618	1	59.4	.010	1	2.54	102.0	95.3	8.0	100	121	131	147	162	207	260	312	330	376	1.0	1.0
AVERAGE			61.7	.015	2	2.50	102.1	94.5	10.7	86	99	114	136	162	214	249	303	337	382	.9	2.6
SAMPLES		13																			

† Research octane numbers above 100 determined by ASTM D1656.

TABLE 6.--Cumulative percents of samples of all grades by research octane numbers by districts, motor-gasoline survey, winter 1968-69

Research octane number	District																	Cumulative total samples
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
90										1.2			1.8	1.0				15
91			1.0					0.8		2.4	0.6	0.8	7.3	8.1	2.2	4.6	3.6	89
92		0.3	3.1				0.9	.8	27.6	31.3	24.7	3.6	27.5	16.7	2.9	6.2	5.4	419
93	2.5	1.5	4.9	2.1	2.1		4.3	5.6	46.2	47.6	40.9	10.4	40.2	35.4	25.4	8.5	13.5	753
94	16.9	15.7	28.1	18.8	12.2	21.4	25.6	33.1	49.7	50.0	47.9	30.3	48.8	47.4	46.4	39.2	36.9	1,473
95	45.8	45.4	48.8	48.5	47.6	42.8	49.3	47.1	50.3	50.0	50.3	43.0	50.8	49.8	50.7	50.0	47.7	2,178
96	50.8	50.2	50.9	51.2	50.3	49.8	51.7	50.4	50.3	51.8	50.6	46.2	52.2	51.7	50.7	50.0	49.5	2,295
97	52.5	52.1	52.4	52.1	50.3	50.2	52.6	53.2	50.3	52.4	51.5	53.4	62.2	58.9	50.7	50.0	50.5	2,429
98	52.5	52.1	52.7	52.1	51.3	50.2	52.6	53.5	51.7	54.8	52.1	53.4	63.5	62.7	50.7	50.0	50.5	2,457
99	54.2	53.3	53.7	54.2	57.7	63.4	57.3	55.7	82.1	91.0	75.0	57.0	69.0	76.1	58.7	52.3	53.2	2,805
100	80.5	79.2	86.2	87.8	94.7	99.2	91.0	96.1	100.0	100.0	98.5	91.2	99.7	97.1	99.3	99.2	100.0	4,208
101	99.2	99.5	99.7	99.4	99.5	99.6	100.0	99.7			100.0	99.6	99.8	100.0	99.3	99.2		4,521
102	99.2	99.7	99.7	100.0	100.0	100.0		100.0				100.0	100.0		100.0	100.0		4,531
103	100.0	100.0	100.0															4,535

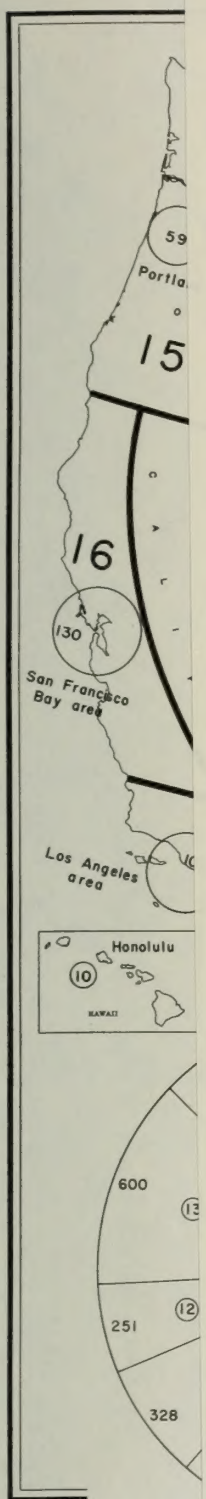
TABLE 7.--Cumulative percents of samples of all grades by motor octane numbers by districts, motor-gasoline survey, winter 1968-69

Motor octane number	District																Cumulative total samples
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
82													0.5	1.4				6
83									5.5	0.6	0.3		1.3	8.6				36
84		0.2	0.3	0.3				0.6	21.4	1.2	.3		4.0	15.3		4.6	5.4	107
85	3.4	5.6	4.3	2.1	2.1	0.4	1.4	1.9	42.8	14.5	7.5	2.8	23.2	27.3	6.5	13.1	23.4	442
86	20.3	23.6	22.8	7.7	15.3	14.8	10.0	22.0	47.6	41.6	23.2	15.9	42.0	45.5	34.1	30.0	45.0	1,183
87	44.1	44.3	43.5	31.5	39.7	38.3	28.4	41.2	50.3	48.8	42.6	30.7	48.8	49.8	47.8	46.2	49.5	1,919
88	50.8	50.2	49.6	51.2	49.7	49.4	51.7	48.2	50.3	50.6	48.3	44.6	51.3	53.1	50.0	47.7	50.5	2,257
89	53.4	52.1	52.4	52.1	50.3	50.2	52.6	52.4	51.0	51.8	49.8	53.0	56.2	58.9	50.7	50.0	50.5	2,380
90	57.6	55.4	54.0	53.9	50.8	50.2	53.1	54.6	51.7	53.6	50.8	55.4	61.3	63.6	52.9	53.8	54.1	2,493
91	74.6	73.0	57.0	57.1	60.8	54.3	58.8	59.6	60.0	56.0	54.9	62.2	68.2	79.4	73.2	74.6	76.6	2,902
92	89.0	88.4	77.7	72.9	71.4	64.6	71.6	78.0	78.6	80.7	70.2	75.3	80.3	86.6	96.4	90.0	99.1	3,600
93	98.3	97.7	95.9	88.4	88.4	83.1	86.3	95.0	93.1	96.4	88.7	94.0	91.0	94.7	98.6	93.1	100.0	4,202
94	100.0	99.8	99.7	97.6	96.8	97.1	98.1	99.7	93.8	100.0	95.9	98.8	94.8	98.6	99.3	98.5		4,436
95		100.0	100.0	100.0	98.9	100.0	99.1	100.0	95.9		98.7	99.6	96.2	100.0	100.0	100.0		4,488
96					100.0		100.0		97.2		99.4	100.0	98.8					4,513
97									100.0		100.0		99.7					4,524
98													100.0					4,526

TABLE 8. - Locations and numbers of samples, motor gasoline survey, winter 1968-69

State	Location	Samples
District 1 (Northeast area)		
Maine	Portland	10
Massachusetts	Boston area	108
	2 locations	118
District 2 (Mid-Atlantic Coast area)		
Connecticut	Hartford	66
Maryland	Baltimore	100
New Jersey and New York	New York City area	185
New York	Ithaca	10
Pennsylvania	Harrisburg	9
Pennsylvania and New Jersey	Philadelphia area	158
Virginia	Richmond	82
	7 locations	610
District 3 (Southeast area)		
Alabama	Birmingham	55
	Mobile	10
Florida	Jacksonville	21
	Miami area	100
	Tampa	2
Georgia	Atlanta	112
North Carolina	Charlotte	78
	Wilmington	9
South Carolina	Charleston	4
	9 locations	391
District 4 (Appalachian area)		
New York	Buffalo	71
Ohio	Cincinnati	64
	Cleveland	71
	Lima	1
	Toledo	59
Pennsylvania	Northwest Pennsylvania	18
	Pittsburgh	52
	7 locations	336
District 5 (Michigan)		
Michigan	Central Michigan	58
	Detroit	119
	Northern Peninsula	12
	3 locations	189
District 6 (North Illinois area)		
Illinois and Indiana	Chicago area	126
Iowa	Davenport	42
Wisconsin	Madison	7
	Milwaukee	68
	4 locations	243
District 7 (Central Mississippi area)		
Indiana	Evansville	12
	Indianapolis	79
Kentucky	Louisville	64
Missouri and Illinois	St. Louis area	56
	4 locations	211
District 8 (Lower Mississippi area)		
Arkansas	Little Rock	79
Louisiana	Baton Rouge	12
	Lake Charles	2
	New Orleans	66
	Shreveport	50
Mississippi	Jackson	77
Tennessee	Memphis	73
	7 locations	359
District 9 (North Plains area)		
Minnesota	Minneapolis-St. Paul	99
North Dakota	Fargo	40
	Williston	6
	3 locations	145
District 10 (Central Plains area)		
Iowa	Des Moines	48
Kansas	Phillipsburg	10
Kansas and Missouri	Kansas City area	62
Nebraska	Omaha	36
	Scottsbluff	10
	5 locations	166
District 11 (South Plains area)		
Kansas	Coffeyville	6
	McPherson	10
	Wichita	66
Missouri	Springfield	10
Oklahoma	Bartlesville	6
	Oklahoma City	72
	Tulsa	57
Texas	Dallas-Ft. Worth	79
	Tyler	12
	Wichita Falls	10
	10 locations	328
District 12 (Southern Texas)		
Texas	Corpus Christi	55
	Houston	149
	San Antonio	47
	3 locations	251
District 13 (South Mountain States)		
Arizona	Phoenix	63
	Tucson	14
California	Bakersfield	75
Colorado	Denver	95
Nevada	Las Vegas	6
	Reno	8
New Mexico	Albuquerque	70
	Deming	10
Texas	Amarillo	62
	Big Spring	10
	El Paso	50
	Lubbock	19
	Midland	61
Utah	Salt Lake City	57
	14 locations	600
District 14 (North Mountain States)		
Idaho	Boise	12
Montana	Billings	50
	Great Falls	18
Washington	Spokane	92
Wyoming	Casper	37
	5 locations	209
District 15 (Pacific Northwest)		
Oregon	Portland	59
Washington	Seattle	79
	2 locations	138
District 16 (Northern California)		
California	San Francisco Bay area	130
	1 location	130
District 17 (Southern California and Hawaii)		
California	Los Angeles area	101
Hawaii	Honolulu	10
	2 locations	111
	Total	88 locations 4,535

DISTRICT	LOCATIONS	SAMPLES	PERCENT
1	2	118	2.6
2	7	610	13.5
3	9	391	8.6
4	7	336	7.4
5	3	189	4.2
6	4	243	5.4
7	4	211	4.7
8	7	359	7.9
9	3	145	3.2
10	5	166	3.7
11	10	328	7.2
12	3	251	5.5
13	14	600	13.2
14	5	209	4.6
15	2	138	3.0
16	1	130	2.9
17	2	111	2.4
Total	88	4,535	100.0


59
Portla
15
16
130
San Francisco
Bay area
Los Angeles
area
Honolulu
10
HAWAII
600
13
251
12
328

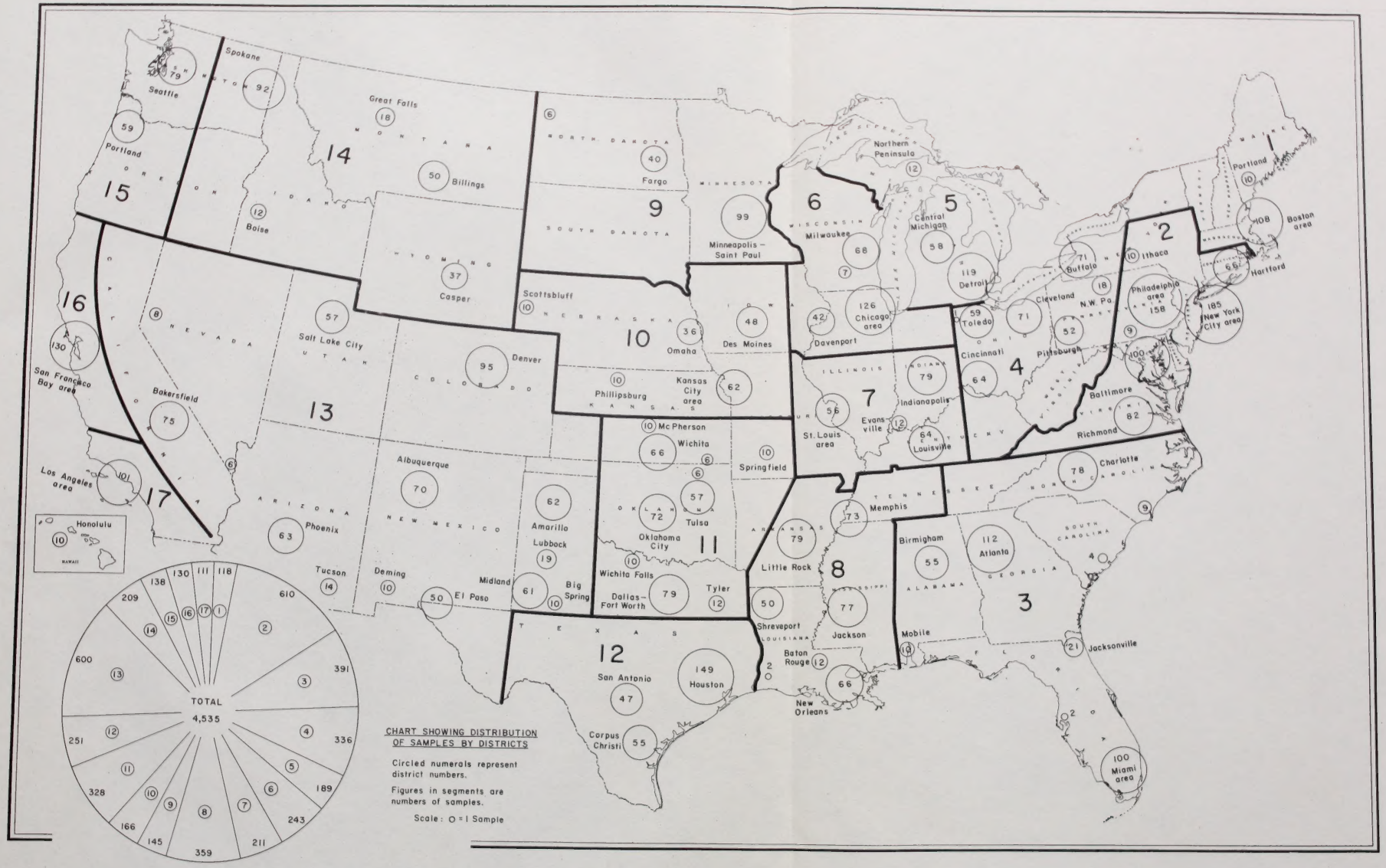


FIGURE 5.– Map Showing Locations and Numbers of Samples for the National Motor Gasoline Survey, Winter 1968–69

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